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THE SPHERE, MARCH 31, 1945
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Vol. CLXXX No. 2358 WITH WHICH IS INCORPORATED THE GRAPHIC MARCH 31 1945

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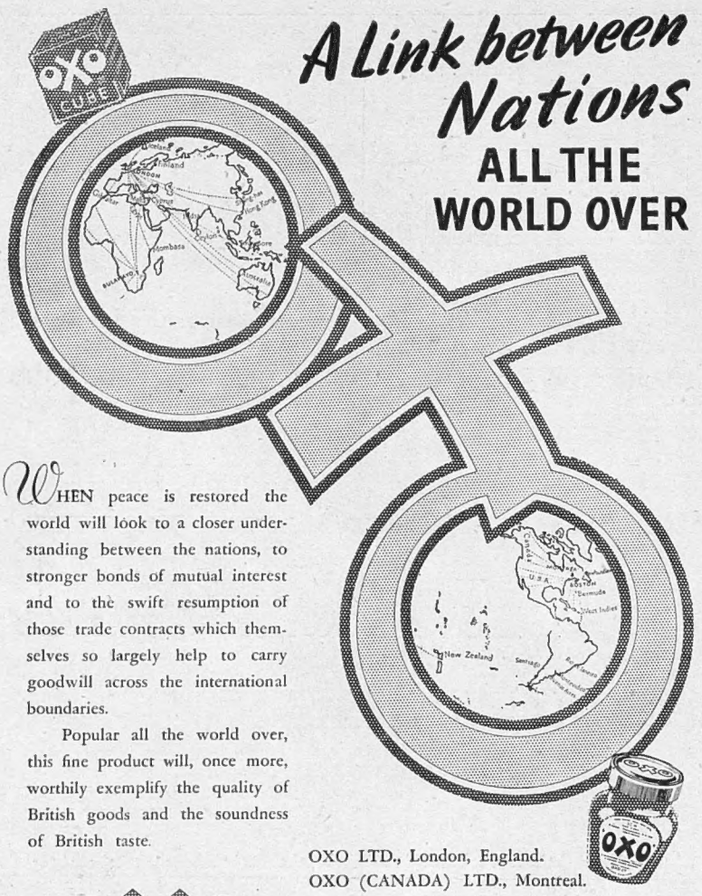

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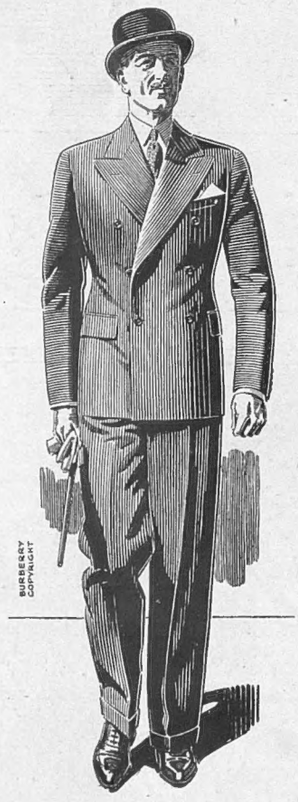

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'THE SOUND AND SIGHT OF THE FUTURE'

Volume CLXXX No. 2358 The SPHERE, London, March 31, 1945

THE SPHERE
With which is incorporated "THE GRAPHIC"
The Empire's Illustrated Weekly

THE CAPITAL OF THE SAAR IS CAPTURED: AMERICAN TROOPS IN THE STREETS OF SAARBRUCKEN, WHICH FELL WITHOUT A BATTLE TO THE SEVENTH ARMY ON MARCH 20. The great industrial centre has been reported to be nine-tenths destroyed

After the collapse of the German resistance in the great Saar Basin, town after town of the highest importance fell into Allied hands in such quick succession that it was difficult to keep pace with all of them. On March 20 the River Saar was crossed at two places, and the capital of the whole region—Saarbrucken—came into Allied possession without a battle. Before the war this great industrial town had 135,000 inhabitants: fewer than 1,000 of them were found to be in the town when the Americans entered. Many of the streets bore signs of air bombardment and shelling, and one estimate stated that the city had been nine-tenths destroyed. This picture was taken as the American troops filed down the main street into Saarbrucken: to the right, just out of the picture, is a sign bearing the words: "Karlsruhe, 142 km." At the time of writing, the Americans are well on the way to that town, on the east bank of the Rhine!

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A WAR NEWSLETTER —No. 291

1, NEW OXFORD STREET, W.C.1.

Eastertide 1945.—This year the season of returning light, hope, rebirth and rededication has not belied its name. We have hoped before in the past six years, seen the end where no end was. This Easter the indications everywhere gave solid grounds for confidence that the end is in sight, almost within our grasp. For the tyrants their pentecost of calamity preceded, rather than dated from, the Passover. East and west, the enemies of peace have taken such shattering knocks as no nations and no armies before have ever stood up to and survived. Hitler and his gang may indeed avert "another 1918." The veriest Jonah among the Allies cannot doubt that he cannot avert a 1945 a defeat and humiliation, a chaos and total collapse, compared with which 1918 will seem a picnic and almost a victory (which indeed it was). In the ruins and ashes of the Third Reich the German and the Japanese people can see the appointed end of tyrants and all who follow and espouse tyranny, and the judgment of a God who is not mocked. The lesson is for all to read. It has been bought at a price which cannot be counted, in suffering, in destruction of human life and treasure, hopes and illusions. Humanity and civilisation, or that part of both which survives, start again to grow painfully—from the egg. That is the significance of Easter always, and never more so than of Easter 1945

Despair or Apathy ?—The assault on Germany from the air, on land, on sea, continues to increase in intensity. Bigger, brighter and better bombs are devised and go down. The robuster publicity men in the Allied countries glorify the results of the latest "earthquakers," which, apparently, outdo Nature's finest feats of convulsion and can blow blocks of houses away for a distance of 30 miles. To be perfectly frank, our leaders and America's, and watchers in neutral countries, have been surprised and disappointed by the enemy's powers to resist the united frightfulness of the Allies. So, I confess, have I. We had reason to believe that the blitz on London brought us to a pretty pass, if perhaps not quite near "breaking-point." That once-accepted idea must be scrapped The blitz on London etc., it is now admitted, was a mere flea-bite compared with the punishment now being meted out to almost every Reich city of consequence ; and since we reject the view that Germans are a "master-race" in courage and endurance, we are a little more ready to revise our earlier view of the magnitude of our own trials in 1940-41 We fall back on other explanations for the incredible endurance of the Germans, so far transcending our expectations and those of Mr. Churchill and Sir Arthur Harris. Item : The German patent in bomb-proof shelters was vastly superior to ours. Item : The surrender of individual will by the German people to the Nazi tyranny has made the Reich proof against surrender to frightfulness. Item : Goebbels' shrewd "Communist-bogy" propaganda has been much more effective than we supposed. We ridiculed it too soon. In short, we explain our disappointment and surprise by theorising that German endurance is blended of despair and apathy about equally mixed. We rightly refuse to underrate the frightfulness of our terror campaign or to accord to the Germans the courage of free men Meanwhile look in vain for *results*, let us be patient and remember that S.H.A.E.F knows best. So far as you and I know, German civilians and foreign workers have little opportunity just now to listen to the B.B.C. or other broadcasts, and find life too noisy to catch the drift of loudspeakers. But our staffs at the front are in touch with German prisoners and mix with civilians who emerge from the shelters of newly-captured cities and villages, and we may be sure that Eisenhower does not waste his breath. We may expect a dividend. We may perhaps dream of an early melon. The veriest pessimist among us must entertain the probability that something must break soon and something like a debacle begin to slip down the raddled face of the Dragon's Rock For everything must have an end at last, even the Wehrmacht, even Hitler's Reich, even Hitler. And the Allies are just now quite emphatically assisting the tempo of Nature's Law of Ultimate Finality. Eisenhower, be sure, hears some stable secrets and is making his book accordingly

THE QUEEN OF HOLLAND RETURNS TO HER NATIVE LAND : Queen Wilhelmina in the liberated town of Eindhoven, where the civilian population were given a day's holiday to greet her. For the first time since May 1940, Queen Wilhelmina of Holland trod the soil of her native land recently when she arrived in Europe by plane from London and travelled to Holland via Brussels. The first Dutch town she came to was Knocke, where she was immediately recognised and heartily cheered. She visited Flushing and other places in liberated Holland and received a tremendous ovation wherever she went. Queen Wilhelmina has since returned to England

Eisenhower Knows Best.—The air is filled with Eisenhower's advice to Germans, soldiers and civilians, and to foreign slave workers in Germany. If you and I wonder whether these are idle words and

A Point for Electors.—When you come to decide (as sooner or later you must by your vote decide) whether you prefer to risk the dangers inherent in ending all possible controls as soon as may be, or to live enslaved to an ever-multiplying Bureaucracy and its impositions and inquisitions, there are one or two points, big or small, well worthy of your consideration. Imprimis, in earlier periods of gravest danger in your history, your freemen ancestors took those risks and overcame them, and, indeed, they then wrote the chapters of our great days as a nation And here 's a small point, not irrelevant. Your butcher and your baker, after a year or so of trial of your honesty and decency, take the risk of trusting you. They send you your leg of lamb (!) and your bread, and trust you to pay the bill in due course. Bureaucracy never does that It can never credit an individual with honesty. Every quarter when you apply for supplementary petrol (for example), it compels you to look up your identity-card number, to replot the mileage to your station, your bus-stop, your place of business and so forth. Four years of honesty go for nothing. The State has no pity, no sympathy bred of imagination, for the desperate plight of a wartime householder, snowed under with forms and urgent duties And it has no faith in British decency. Nor, under any conditions governed by our present system of government, could Bureaucracy acquire that sympathy or faith, or brave the risks your tradesman willingly takes. It is a trifle ? Perhaps ; but a tremendous trifle. For it points a finger at the heart of the issue which is now joined by Mr. Churchill's shrewd party decision. Life after the war under unrelaxed wartime controls will be undignified, unbearable, unworthy of citizens of a great nation (The Socialist Party is pledged to such continued controls.) History suggests that the *risks* of freedom are the very risks which men must take if they desire to prolong their finest hour and remain a great nation. The shades of the prison house (warmed, air conditioned and State-inspected) begin to close about the growing robot, the descendant of the Yeoman of Agincourt, the Elizabethan seaman, Nelson's and Wellington's bonny fighters and the Contemptible Army of 1914-18. The Desert rats, the men of Arnhem have braved many risks. Is the risk of post-war freedom beyond their compass ?

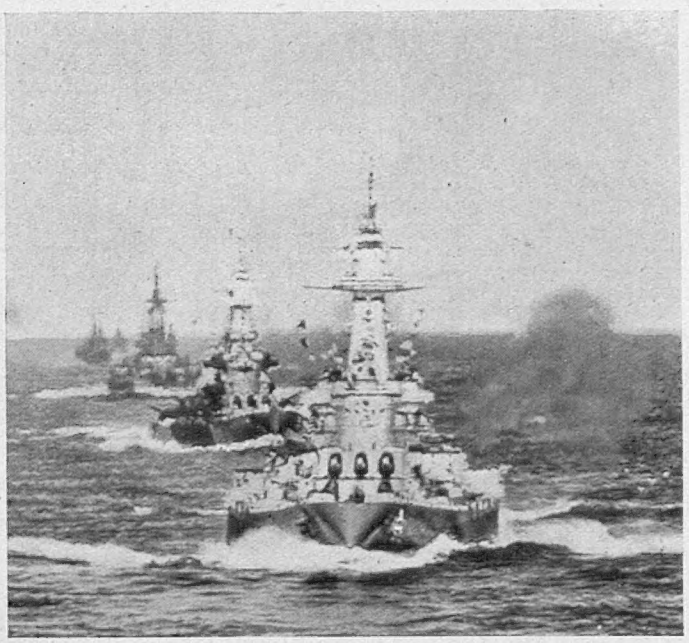
A Fleet Street Puzzle.—One of my puzzles—"headaches," I ought to write—is this : why is it that the "millions of workers" whose so-called spokesmen declare that they are out for total nationalisation of coal, industry, finance and land, favour daily journals which cry out for the preservation of individual initiative and constantly castigate the poor results of Government control ? Why is it that the "million workers" who demand equality of opportunity and the end of privilege and class barriers seem always to read (and swear by) journals which base so much of their appeal on the doings of people with titles or wealth or the once-called fashionable or "society" lights ? Why is it that these root-and-branch reformers and levellers, these uprooters of bad old traditions, choose journals which give so much prominence to the "sport of kings" and the luxury recreations of leisure ? There exist, of course, a very few journals genuinely or outwardly red, pink or Left. But the majority of our Press is, whatever it may declare in a leader or suffer to be printed in its "forum," true blue in its addiction to the "bad old traditions" of individual freedom, initiative, and so forth and to the sweets and privileges of the Age of Privilege. It is a puzzle. Whom should I suspect of half-heartedness in the "clean-sweep-and-new-broom movement ? The millions of workers or their favourite journals ? Or shall I merely conclude that the spokesmen of the millions are talking through their hats and don't know what is in the mind of the millions ? Somebody has his tongue in his cheek ; and I think that "somebody" might be represented by a cartoonist as the figure of Britannia sitting on a fence labelled "The New Democracy," with a field on either side : the one a lush and flowery meadow in the Old Master style, and the other ridge and furrow ploughed in rigid lines by mechanical means. Progress is all on one side, but some of the sweetest grass and prettiest colour are on 't'other. And the legend might be : "You can't have it both ways." Cakes and ale, or the other Beveridge which can be enjoyed only by ceaseless toil and thrift ?

A Plea to Car-Designers.—If it should happen that the fetters of fuel control so relax in our time that we become once more motor-car minded, we may one day wake up and take notice of new designs in popular cars I address an open letter to designers of the post-war car for the little man. Since you designed your 1939 models, times have changed for the little man. He no longer requires a car for the swiftest runs to Brighton and Blackpool. He wants a utility car, not a delicate streamlined, graceful instrument of transport. Forget your streamlining ; think in terms of capacity. Plan your luggage-grids with thought for tired, war-worn customers who henceforth, as in the past six years, have to hump sacks of seed-potatoes, bales of straw, and other burdens on to their sole means of transport. Return to flat and low grids, flat roofs with basket grids for luggage, roomy interiors with space for suit-cases as well as children's feet. What we users lose in grace, let us gain in space Our need is not speed. It is space and ease of disposal of heavy packets. Go back to earlier models Put your spare wheel again against the *side* of the car, and give us a large, flat back-grid, a basket roof-grid, and large doors behind, with generous floor space. And if your new model suffers in speed thereby, I, for one, shall not complain. Your 1939 streamlined beauty has proved a total "flop" for the uses of 1939-45. And those uses will not swiftly change in the years ahead.

THE OLD STAGER

NAVAL PICTURES from the PACIFIC OCEAN

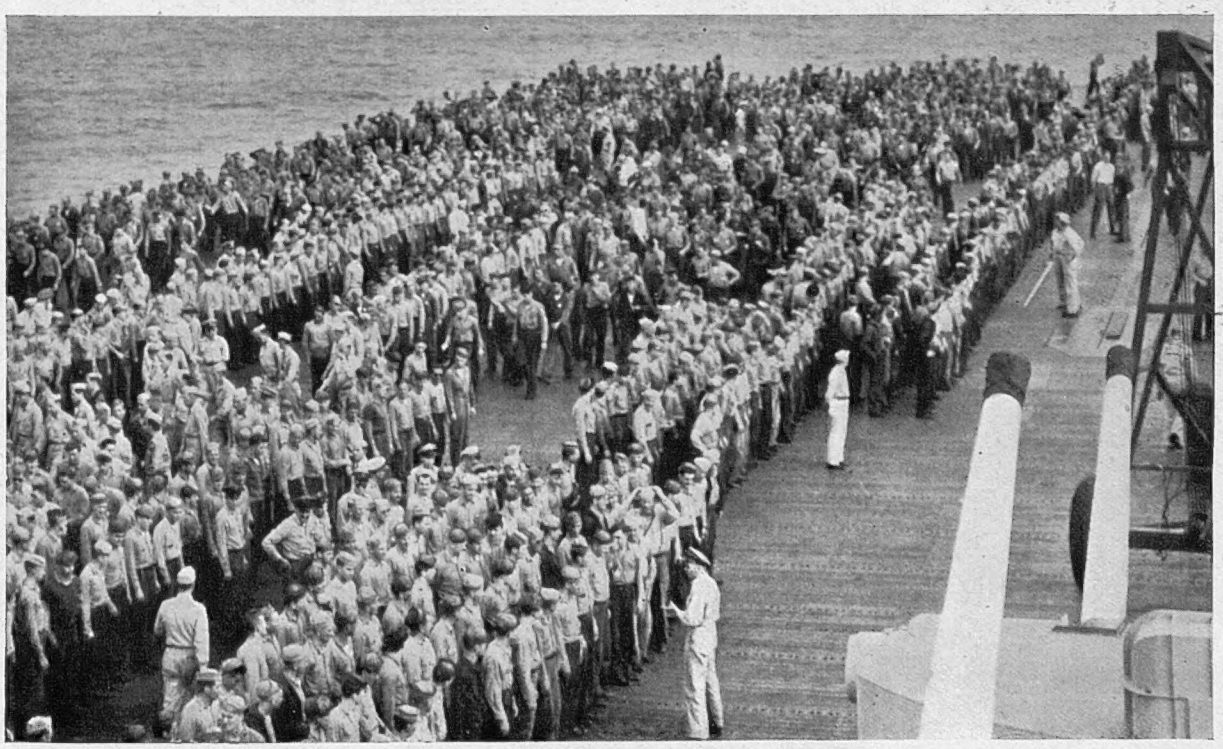
AN IMPRESSIVE PICTURE OF SEA-MIGHT, as a powerful force belonging to the American Third Fleet heads for an anchorage in the Pacific : Led by two giant aircraft-carriers, their decks crowded with planes, this eight-ship Unit heads, unmolested by the Japs, to take up a new anchorage. In the foreground is an Independence-class carrier, followed closely by one of the Essex class : steaming in their wake are three modern American battleships and three cruisers. The picture was taken with a tele-photo lens, which makes the big vessels appear closer than they actually are. Some of the newest and biggest battleships of the U.S. Navy, as well as hundreds of cruisers, destroyers and lesser vessels, are now taking part in the naval and amphibious operations against the Japs, and will remain in Far Eastern waters until the final assaults have been launched



A MIGHTY LINE OF U.S. BATTLESHIPS AND CRUISERS—a picture taken from the "island" of an aircraft-carrier sailing ahead of the oncoming line. Planes on the flight-deck of the latter were lined up ready to take off should enemy aircraft appear on the scene. Naval vessels like the above are supporting the forward moves of the ground forces as they advance from island to island in the Pacific

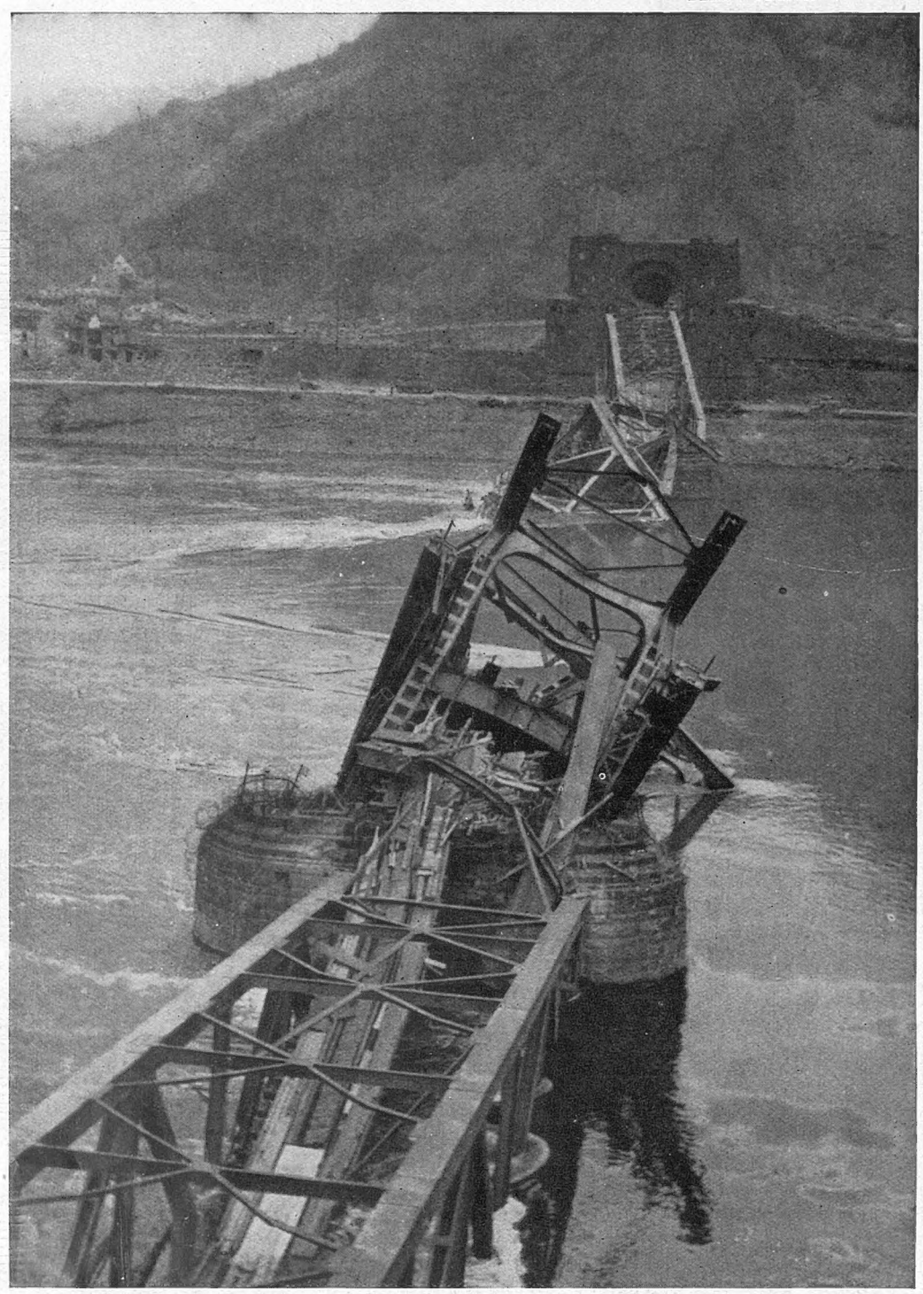
A BATTLESHIP OF THE IOWA CLASS ON A WAR MISSION : Behind are other vessels of the Task Force, including an Essex-class carrier (at left). *Iowa* is one of a new class of 45,000-ton battleships completed in March 1943. She mounts nine 16-in. guns. The *Essex* is one of America's newest carriers : she carries around 100 aircraft and has a speed of 35 knots. She was completed in December 1942

AN ILLUMINATING PICTURE WHICH SHOWS HOW AMERICAN WARSHIPS HAVE ADAPTED THEMSELVES TO THE CONDITIONS OF WARFARE IN THE PACIFIC : This is the crowded deck of an aircraft carrier ; the planes have all been stored below, and the big flight-deck is now covered with hundreds of jeeps, lorries and other motor vehicles for the use of the U.S. Marines carrying out invasion operations in the Pacific. By this means a huge mass of material can be conveyed expeditiously to just where it is required at the exact moment it is wanted by the ground forces

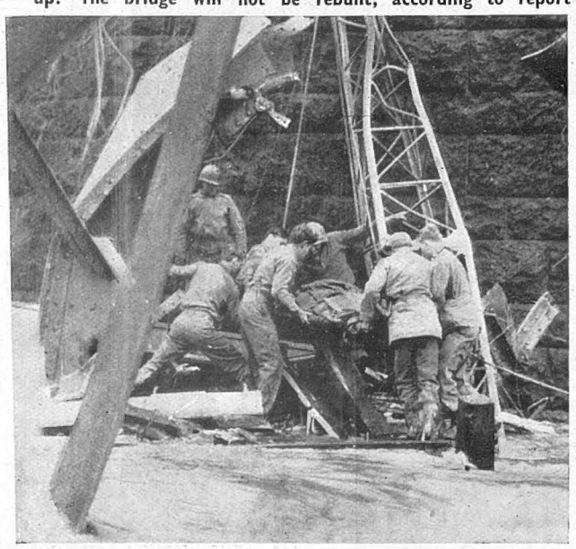


On left—**THE AIRMEN ON BOARD A U.S. AIRCRAFT-CARRIER are "briefed" on the flight-deck for a mission against Tokyo :** The whole crew and officers have here been assembled, to learn of the imminence of a great strike against Jap military targets as the aircraft-carrier nears the Japanese homeland. The attacks in which these men participated were carried out on February 16 and 17 by a powerful force of the Pacific Fleet under the command of Vice-Admiral Marc A. Mitscher. The picture gives a vivid impression of the number of men who take part in the great carrier-borne "strikes" against Japan

NEW PICTURES FROM THE BATTLE-LINE IN GERMANY—Taken During Recent Operations by the British and American Armies



THE LUDENDORFF BRIDGE, OVER THE RHINE AT REMAGEN, AFTER IT HAD COLLAPSED ON SATURDAY, MARCH 17: It was across this that our first bridgehead east of the Rhine was built up. The bridge will not be rebuilt, according to report



A DRAMATIC MOMENT DURING THE RESCUE OF AN AMERICAN ENGINEER trapped when the bridge collapsed. The picture was taken from the east bank a few minutes after the bridge had crumpled into the river. The collapse of the Remagen railway bridge was as sensational as its capture. At 3.15 p.m. on March 17 it just crumbled quietly into the Rhine, after having served its purpose, for eleven days, in the "build-up" of the Allied bridgehead on the river's east bank: it was not destroyed by a shell or bomb, despite one German story of a "suicide pilot" who had crashed his plane against its centre section. Apparently, the bridge had been damaged by the enemy before its capture, and the centre span had been left without proper support. American engineers and other troops were on the bridge when it fell

A BRITISH WAR CORRESPONDENT, KILLED AT THE FRONT, is buried behind the lines: War correspondents are here seen attending the memorial service at the Henri Chapelle cemetery, for Peter Lawless, British war correspondent, killed at the Remagen bridgehead. The chaplain reading the service is Captain Alfred S. Kline, who last served at the Congregational Church in Bolton, Conn. In the group is Ann Stringer—only woman in the picture—who is correspondent for the United Press. Her husband, William Stringer, Reuter's correspondent, was killed during the drive for Paris

A PICTURE TAKEN DURING THE THIRD ARMY'S SPECTACULAR DASH TO THE RHINE: Wrecked German equipment on the road to Coblenz. Along this road, the U.S. Fourth Armoured Division dashed many miles to a point near the Rhine in the vicinity of Coblenz. In the background can be seen a few of the endless stream of vehicles of all descriptions which made the break-through successful. On the right is the wreckage of what had been several batteries of 20-mm. anti-aircraft guns, which the Germans had hoped to use to stop any attack

BUILDING ALLIED AIRFIELDS ON GERMAN SOIL: A Construction Unit working at high pressure to make still another landing-strip on occupied territory. This is the hundredth airfield constructed for the Second Tactical Air Force in France, Belgium, Holland and Germany since D-Day. Since then, only four days have passed when the Construction Units have not been working on making these airfields

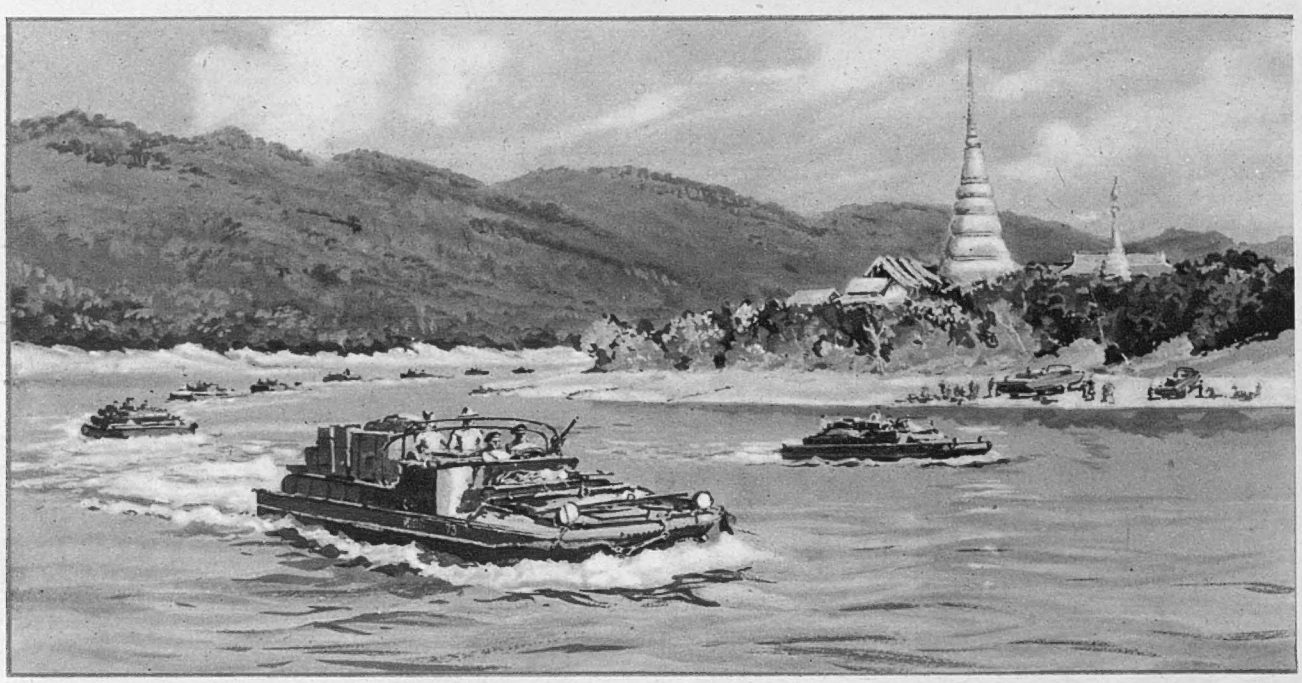
AN OLD FORT WHICH WAS USED BY THE GERMANS FOR ANTI-AIRCRAFT DEFENCE : Captured by the American Ninth Army on the Rhine at Kapellen, this old German fort was found to have been part of the Rhineland anti-aircraft defence system. It has a flak tower which overlooks the countryside for miles around. The fort was built in the year 1724 and is surrounded by a moat

THE U.S. ARMY OPEN A RIVER-PORT AT RHEIMS, IN FRANCE—A picture taken during the opening ceremony : It is intended to use the port chiefly as a delivery point for supplies and equipment. When in full operation, it is expected to handle many thousand tons monthly, according to Colonel R. W. Barker, Oise Section Transportation Officer. Supplies will come by barge direct from French Channel and Seine River ports, thus easing the strain on the already overburdened French railway system. In addition to the supply tonnage, the port will also handle huge quantities of coal and heavy gravel, the latter sorely needed to repair French highways and U.S. Army "bivouac areas." The port facility for canal traffic is great enough to leave ample space also for the French to continue to carry their normal civilian traffic through the canals

HOW THE AMERICANS CROSSED THE MOSELLE RIVER BY ASSAULT CRAFT in readiness for the storming of the city of Coblenz : With British, Canadian and American forces overlooking the Rhine from Arnhem to Coblenz, and with the bridgehead at Remagen growing every day, the Allies have intensified river-crossing exercises west of Germany's last great natural defence line on the Western Front. When the crossing of the Rhine is made in strength, our assault troops will attack in rubber dinghies like this. In the picture, the troops belong to the American Seventh Army

PUTTING THE GERMANS TO WORK BEHIND THE LINES : Civilians in Bruhl, under the direction of an American Military Government Unit, are seen clearing up bomb damage and searching for the bodies of citizens buried in the debris

WHAT HAS HAPPENED TO MANY GERMAN WAR FACTORIES : This was once an up-to-date building in Neuss, near Dusseldorf ; its output was devoted to furthering the war. To-day it is a mass of shattered concrete, only held up by the twisted steel girders used in its construction



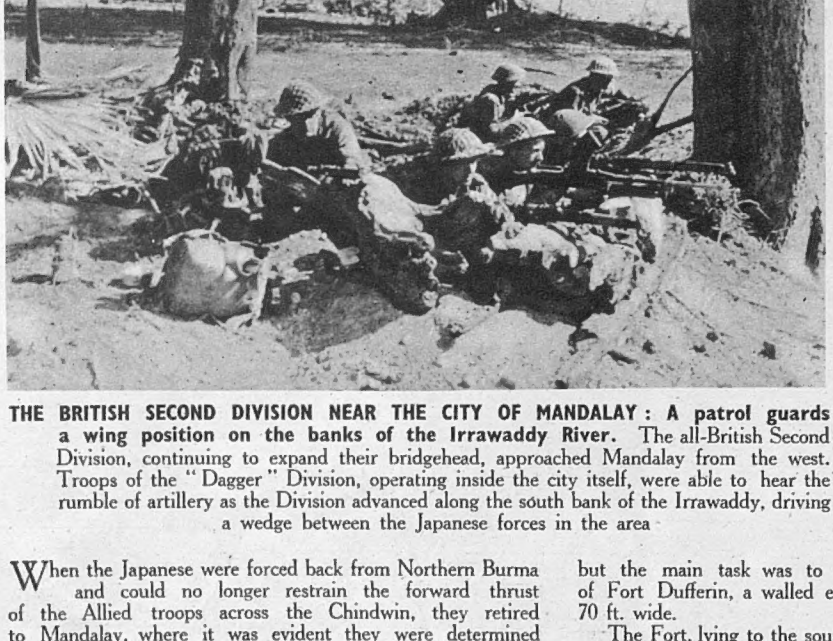
TRANSPORT ON THE CHINDWIN RIVER, one method adopted to keep the forward troops in Burma supplied—*Drawing by Wm. McDowell.* The Burmese campaign has, more than any other theatre of war, proved the immense value of the amphibious vehicle. With bad roads, and banks covered in jungle, the waterways of Burma become vital lines of rapid communication. The drawing shows a flotilla of "ducks" conveying stores up the Chindwin River. In the background, two have run ashore to unload

FIGHTING in MANDALAY

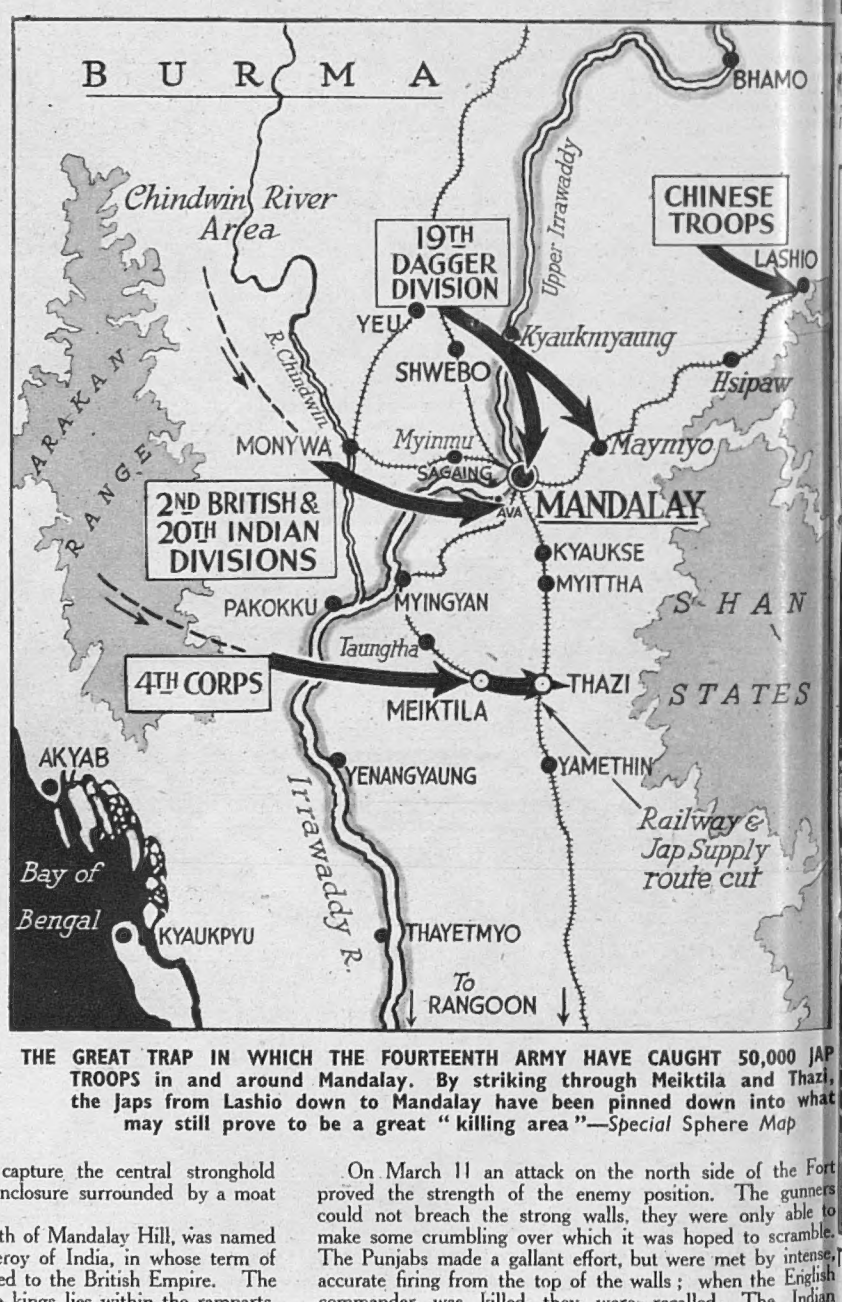
How the Fourteenth Army Reached the Heart of the Jap Positions

—*Special* Sphere *Drawings*

BRITISH TROOPS TAKE MEIKTILA : Men of the Punjab Rifles advancing under cover of a Sherman tank ; smoke from the burning village obscures the field. Meiktila, centre of the main land communications in Burma, was captured by British troops of the Fourteenth Army following a lightning thrust eastwards across the Irrawaddy. After airfields in the area had been cleared by mechanised columns, a strong airborne force of Fourteenth Army troops was landed on them. The town itself, 80 miles from Mandalay, was finally cleared of the enemy on March 3, and from it patrols struck out in all directions



THE BRITISH SECOND DIVISION NEAR THE CITY OF MANDALAY : A patrol guards a wing position on the banks of the Irrawaddy River. The all-British Second Division, continuing to expand their bridgehead, approached Mandalay from the west. Troops of the "Dagger" Division, operating inside the city itself, were able to hear the rumble of artillery as the Division advanced along the south bank of the Irrawaddy, driving a wedge between the Japanese forces in the area



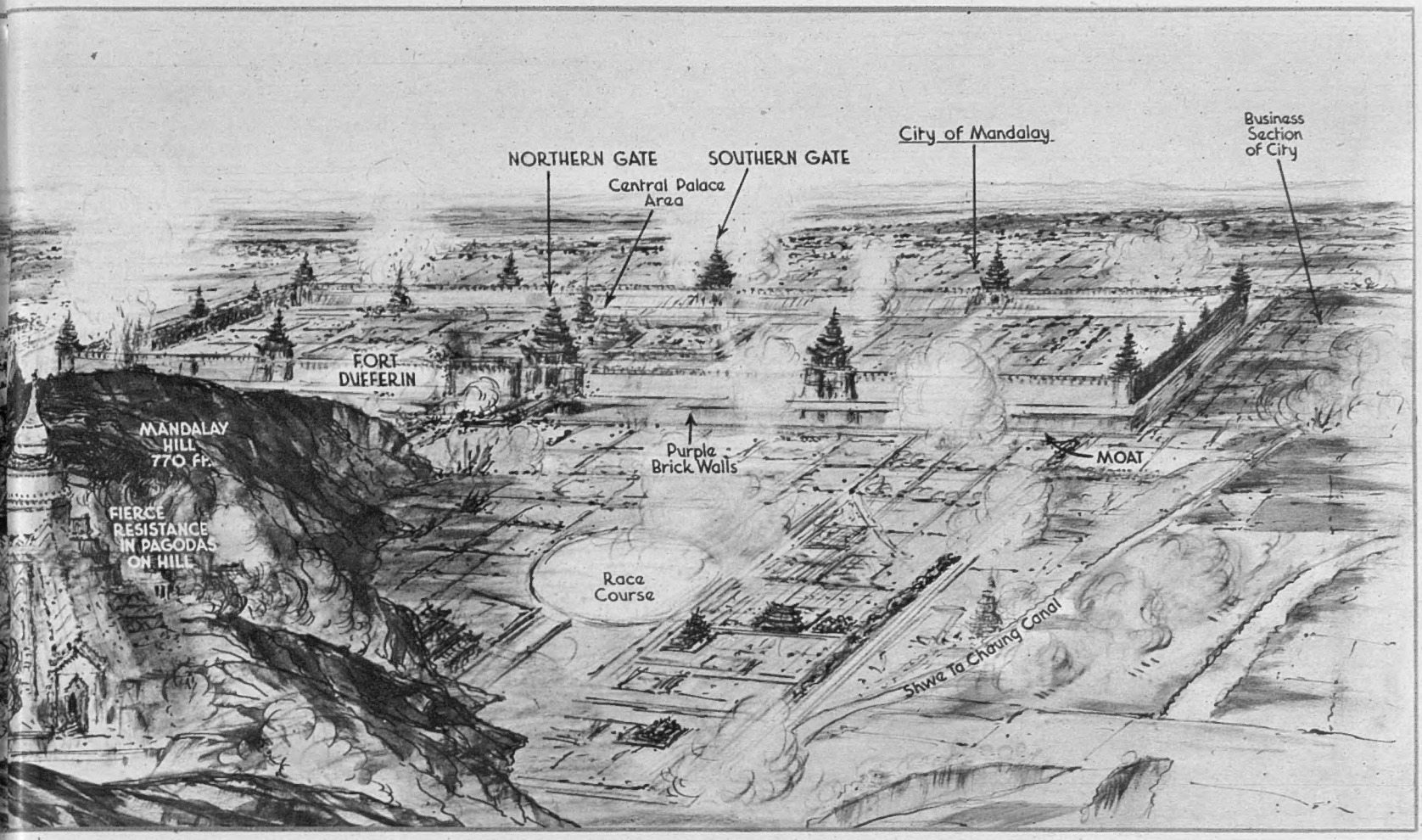
THE GREAT TRAP IN WHICH THE FOURTEENTH ARMY HAVE CAUGHT 50,000 JAP TROOPS in and around Mandalay. By striking through Meiktila and Thazi, the Japs from Lashio down to Mandalay have been pinned down into what may still prove to be a great "killing area"—*Special* Sphere *Map*

When the Japanese were forced back from Northern Burma and could no longer restrain the forward thrust of the Allied troops across the Chindwin, they retired to Mandalay, where it was evident they were determined to hold, in order to protect Rangoon and to keep open the roads to Siam.

The northern suburbs of Mandalay were entered on March 8, when the railway station was seized in the night, after which the Gurkhas rushed for Mandalay Hill, an isolated height, 770 ft. high, overlooking the whole city. This column of British and Indian infantry, with light tanks and mobile artillery, soon held a third of the city, but the main task was to capture the central stronghold of Fort Dufferin, a walled enclosure surrounded by a moat 70 ft. wide.

The Fort, lying to the south of Mandalay Hill, was named after Lord Dufferin, the Viceroy of India, in whose term of office Burma had been annexed to the British Empire. The palace of the former Burmese kings lies within the ramparts, guarded from the outer world by red-brick walls 25 ft. high, backed by deep earthworks. There were five bridges across the moat and five gateways, guarded by slabs of wall at each entrance to prevent evil spirits from getting into the palace precincts.

On March 11 an attack on the north side of the Fort proved the strength of the enemy position. The gunners could not breach the strong walls, they were only able to make some crumbling over which it was hoped to scramble. The Punjabs made a gallant effort, but were met by intense, accurate firing from the top of the walls ; when the English commander was killed they were recalled. The Indian stretcher-bearers, undeterred by the heavy firing, went forward and removed the wounded. Bombing made little impression on the walls, and it was not desired to destroy the palace in the centre, so the slow progress of clearing the rest of the city and encircling the whole had to be undertaken.



THE ATTACK ON THE PALACE FORTRESS OF MANDALAY, SHOWING THE VARIOUS POINTS AT WHICH FIGHTING TOOK PLACE IN AND AROUND THE CITY, as seen from the famous high point, Mandalay Hill (770 ft. high), lying immediately to the north of Fort Dufferin—*Drawing by Percy Home*

...e famous walled palace area occupied by the last King of Burma, Fort Dufferin, is seen in the ...ntre of this view. In the immediate foreground are some of the strongly-constructed pagodas ... which the Japanese forces put up a fierce resistance. Directly below, on the right, is the flat ...a containing the old racecourse and part of the canal, which runs through the entire length ... the city. On the left is an area which still contains many temples set among trees. In the middle distance is Fort Dufferin itself, guarded by its purple brick walls and its moat. The North Gate, around which some fierce fighting took place, occupies the centre of the view. The main central palace area within Fort Dufferin is seen behind this Gate. The main native and business quarters of Mandalay City lie beyond the southern and west walls of Fort Dufferin. The whole area is now in British hands

THE DEFENCE OF THE CITY CENTRE BY THE JAPS: THE SCENE AROUND THE MOAT SURROUNDING FORT DUFFERIN as British troops closed in for the final phases of the assault. Some of the Burmese pagodas are already ablaze within the Fort—*Drawing by W. G. Whitaker*

After the British and Indian forces had captured the general area north of the Fort, a 5·5-in. gun ...was brought up to within a quarter of a mile of the rampart. It fired fifty shells point-blank to ...y to breach it near the bridge. The sergeant sighted the gun by looking along the barrel and ...iving the corrections—a scene reminiscent of Indian Mutiny days. The shells failed to breach the ...ampart, which is extremely solid, but they caused three deep depressions up which the men ...ould scramble over the rubble of brick and masonry. The infantry, men from the Punjab, then ...went forward to the assault and tried to cross the bridge. But they met intense and accurate fire from Japanese posted at the loopholes at the top of the rampart, and from others who were in unsuspected positions under the road on the outer edge of the moat. The infantrymen struggled forward valiantly, but the fire was too much, and after suffering heavy casualties they were ordered to withdraw, till another attempt could be made. The palace walls are faced with red brick, but behind is a heavy earthen rampart some 25 ft. thick. The combined effect of brick and earth successfully resisted our gunfire. The capture of the Fort was successfully accomplished on March 20

WHAT HOPES FOR THE NAZI REDOUBTS?

The Difference Between the "Redoubt" and the "Hedgehog," and How Both may be Set Up by the Nazis for Their Last Stands

By FERDINAND TUOHY

THE process noted some weeks ago of a "Grand Army splitting in many pieces" has rendered fashionable an old military term—the redoubt. Some of the best people prefer reduit, and, indeed, I cited General Guisan's reduit in Switzerland, but why call on the French *réduit*, most times signifying a lodging or hovel, when the Nazis themselves call what they hope to achieve in Austria and parts of Bavaria and Czechoslovakia, "the National Redoubt"? Here is to be the big thing, with satellite redoubts sited wherever the chances are best of holding out and, if possible, damaging or impeding the enemy while doing so.

The next item is to examine what difference there may be between a redoubt and a "hedgehog." Was the latter term born with Mojaisk or Starya Russka? Anyway, some time in 1942, on the Eastern Front, one came to recognise in a "hedgehog" a military islet of carefully-wrought human and material strength deliberately left behind by an army being beaten back. "We shall come back. Meanwhile, block them following us up," as the retreating ones said, without a doubt. The essential matter about a "hedgehog" was that it depended exclusively on its combatant garrison and upon piled-up stores, equipment and munitions. If a "hedgehog" could add to its own defence requirements and supplies, all the better; yet that would be in the way of a lucky extra.

Another thing about a "hedgehog" is that one may be called into being at some centre of strategical (communications) or political importance without the lie of the ground showing much in the way of a natural fastness. As in the case of Berlin, which will be "the greatest 'hedgehog' position in military history," according to the military commentator of Goebbels's *Das Reich*. Lakes and woods on one side of Berlin will be difficult obstacles, and the ruins of the capital will exceptionally support them. Yet a modern Vauban would never have fixed upon flat and open Berlin. One may also speculate on how long the 1,500,000 or 2,000,000 current Berliners will stick it alongside the defenders of this gigantic stockade.

Koenigsberg and Breslau have been typical "hedgehogs."

The redoubt, as seen by the Nazis, appears to be something different. One is prompted to define it as a region lending itself naturally to defence, well-knit, possessing within its confines certain imperative raw materials, war factories and food productivity, together with friendly or docile, at any rate a co-operative population, and not mortally vulnerable to saturation block-busting. Yet this is insufficient, since two brands of redoubt, at least, seem to be looming up, one a kind of Gibraltar, and the other, a vast self-sufficing area. As examples of the former, take Lillehammer and the Aaland Islands; of the latter, the Austro-Czech-Tyrolese-Bavarian enclosure.

Lillehammer is that plateau surrounded by mountains, about 100 miles inland to the north of Oslo, on which rumour once had it we intended launching paratroops. It has its own mines and caves, and is extremely difficult to approach. The Nazis have been fortifying Lillehammer, which could be the hub of that Southern Norway resistance we have good cause to expect for four reasons: launching of V-weapons and piloted planes on England, perpetuation of U-boat campaign, and because Southern Norway offers so much to the defence, and would act as a northern counterpart on a smaller scale, to the main resistance in Central Europe.

Into this "National Redoubt" picked man and beast are headed, the hope being to hold out self-sufficingly over an area perhaps as large as the British Isles. One reason for the prolonged Balaton battle was to win time to evacuate into the redoubt, from Hungary, all the cattle and such humans as were wanted. The Nazis are paying strict attention to sorting out those who can be relied upon to pull their weight. Among the Czechs they cannot expect willing co-operation, although experience has shown them that native hard-headedness has kept the Czechs less resistant than the peoples of other occupied countries.

But in Austria and Bavaria the Nazis are taking good care that the bulk of the civilians required for active participation shall be present in the form of 3,000,000 foreigners of the kind the Nazis trust—Volksdeutsche from Rumania and Hungary—German refugees from the bombed areas, and the families of those party officials and foreign workers who can be relied upon to operate the vital oilfields and iron mines. Which reminds that "the National Redoubt" is likely to be split, or, rather, to be split into lesser redoubts, under Allied blows.

Thus, a limited area clearly so indicated is that around Moravska Ostrava, centre of Czech war production and sally-port from which to menace the Russian rear at Cracow. The Nazis would hate to lose contact with Moravska, on which they will have to rely in extremis for much of their coke, coal, iron and steel, not to mention its value as the hub of a great railway system. Even when it comes to be cut off, the Nazis should cling to Moravska to the utmost of their power, making it a redoubt within a redoubt.

They may also be expected to cling to hill-surrounded Prague, which they won't mind one bit seeing destroyed like Budapest; and to Pilsen of Skoda's. For this purpose, special redoubt forces are being fashioned, consisting of an outer rim of the Reichswehr, supported by the Waffen S.S. and party organisations, and with the Hitler Youth busy as beavers on fortifying and installing endless A.-A. defences.

The complete redoubt force that may materialise round Reichenhall, Salzburg, Berchtesgaden, Munich and Innsbrück, should include formations like Göring's paratroop division, the Alpine Corps, S.S. Shock battalions, grounded Luftwaffe fanatics, "Swallows," and gunners and sappers far in excess of the normal.

We may expect, too, men and women parachutists for keeping contact with occupied Germany, in which connection one feels impelled to suggest that war correspondents are being premature in writing-off the Rhenish Germans as too cowed, numbed and apathetic. The time Germans will begin to be a danger will be a year or two after the war ends, exactly as happened last time. Sly Heine knows full well when to start reacting: when his conquerors are beginning to relax and to hanker for home.

Meanwhile, inside "the National Redoubt" the plan must be for Goebbels to go on radio-ing the Reich and the world, and keeping the satellite redoubts in competition of heroism, one with the other—one gets a foreshadowing of that by the special honouring of La Rochelle's defender.

What a unique company inside that ultimate fastness, including scientists trying, against time, to split the atom, geniuses seeking artificial foods, starry-eyed maidens willing to suffer much more than death for their adored one, and Lavals lost in the heart of Bocheland! The object in the past in getting into an outsize redoubt like the lines of Torres Vedras, was to hold out until reinforcements or a new situation enabled one (*a*) to resume, (*b*) to negotiate.

Hitler's redoubt policy of holding out in one central bastion and in isolated garrisons regardless of frontiers, seems to be designed to gain time (*a*) for the New Chaos, sequel to the New Order, to spread (*b*) for the Sixth Column, composed of inveterate international ideological sympathisers, to develop its undermining of the Left-inclined victory, (*c*) for troubles of Occupation to be nourished, (*d*) for V-weapons to be developed. Also it's the best remaining end for a Nazi.

Closely related to redoubt hopes is the repeated harping on what Frederick the Great did in the struggle between Catholic and Protestant, which began in Bohemia in 1618 and raged all over Germany until the Treaty of Westphalia in 1648. "We need only think back to the Thirty Years War, in the course of which three-quarters of the entire population met its doom and villages and towns were reduced to rubble and ashes," runs the Nazi stimulant. "Life then, it is true, was simpler than our complicated existence to-day.

"Nevertheless, a life and death struggle is hard in every age. Like Frederick the Great, the Führer will lead our generation to victory if people now, as then, will loyally and faithfully follow him not only after every victory, but also after every setback."

Asserting that "we shall develop new weapons and already have a few other things in the background which, when put into service, will develop into a veritable inferno for our enemies," the Nazi pep-talkers stress, all the same, that the real awaited miracle can only come through the community spirit of the German people.

After the state of war with the German people is declared to be at an end, what will happen inside these redoubts? Will they respond to the Nazi Voice from somewhere in Europe, adjuring them never to give in? Implying that the Allies will have laboriously to reduce these strongholds at a time when the battling spirit will have somewhat abated?

Take the commander at Lorient, who says his will be the last German force to lay down its arms. Supposing more of them are in like competitive mood? Several should be able to protect themselves by flooding—as at Dunkirk and in North Holland, which, for its V-firing, may prove a hard nut to crack.

But for the fate of so many hapless Allied civilians inside these scattered redoubts that appear to be looming, the conservation of military life and limb would ordain that the competing heroes be starved out. Largest-ever air attack will indubitably be switched on to resisting redoubts, from Lillehammer to Suda Bay; yet in some of these places, like the cave-ridden Harz Mountains and the immense Thuringian Forest in which war plants are known to have been successfully secreted away, the air arm should require decisive other support.

When the opposition of field armies has ceased, a flagged map should produce interesting wagering round which of the redoubts outside the National, will be the last to yield.

THE LATEST PICTURE OF HITLER AT HIS "EASTERN HEADQUARTERS": Surrounded by what is left of the cream of the German High Command, Hitler argues at the East Front H.Q. on what next steps should be taken. A notable difference from earlier pictures is that the Führer does not dictate or order—but gesticulates and persuades. The look of haughty, mystical intuition has given way to the uncertain, anxious, and almost human, expression of a man who does not know which way to turn. The older officers on the left look grave, worried, dubious; the young Nazi-type General to whom Hitler is talking, bedecked with Iron Cross decorations, has the heel-clicking, suave obedience characteristic of the newly-promoted young Nazi chiefs

THE DICTATOR OF BERLIN: Hauptsturmführer Otto Skorzeny, the man who rescued Mussolini, has been given absolute power of life and death over every man in the armed forces in Berlin. With two other officers, he has been given the task of preparing the many people crowded into Berlin to withstand a siege

TO BECOME THE "GREATEST 'HEDGEHOG' OF THEM ALL"? That is what Goebbels says will be the fate of Berlin. Here is a view of one of the German capital's most important squares, the Leipziger Platz, on which were located many Government buildings, which have since been badly bombed by the Allies

NEW PICTURES FROM RUSSIA

Sent by Radio from Moscow, in Illustration of the Great Advance towards Berlin by the Red Army

THE GERMANS CROSS THE ODER—AS PRISONERS : Their *backs* to the river, the prisoners are being taken back to the Russian rear. The Oder forms the last natural barrier to the German capital: many thousands of the Wehrmacht have now been captured during the fighting in its defence during the past few weeks

FREED BY THE RED ARMY : These French, British and Belgian war prisoners were held in a concentration camp in German Silesia. They were freed by the Russians and are now on their way to a repatriation centre en route for their native lands

A CONCENTRATION CAMP FOR WOMEN ON THE ODER : These British, American, Russian, French, Polish and Czech women have spent several years behind the barbed-wire fences of this camp. The Red Army freed 860 of them, but the enemy had previously had time to drive another 600 further into the interior of Germany in advance of the Russians. The women seen above have now been given their freedom

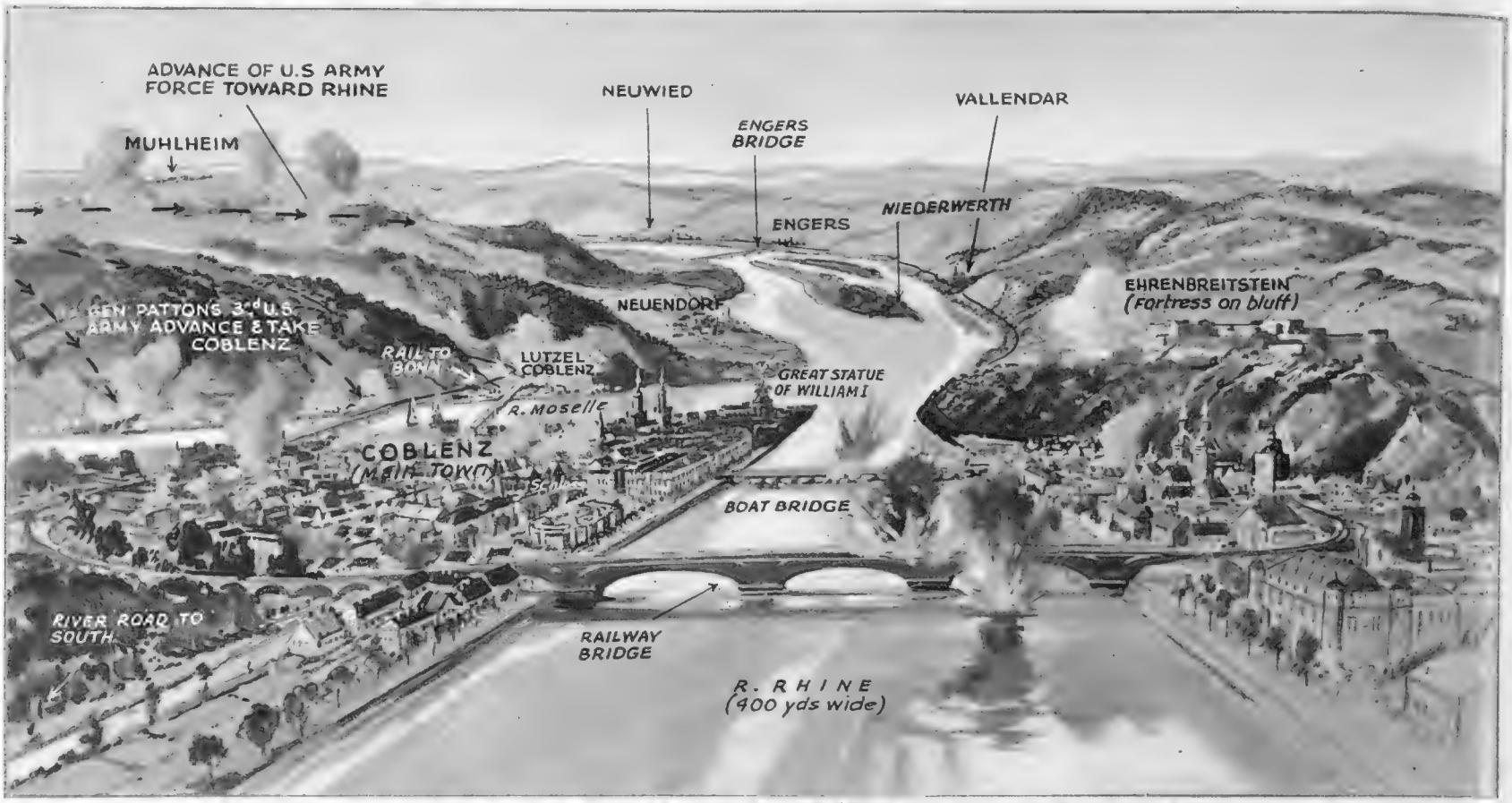
IN THE PROVINCE OF BRANDENBURG, on the First White Russian front. Soviet tommy-gunners clearing up in the streets of Soldin during the Red Army's advance

RED ARMY ARTILLERY COMMANDS HITLER'S FAMOUS MOTOR ROAD TO BERLIN : In their advance on Berlin, Marshal Zhukov's men have captured intact one of Hitler's magnificent new motor highways which leads straight to the capital. The "Autobahnen," Europe's most modern motor roads, were the first major public works undertakings of the Nazi regime. Heavy trucks are seen in the distance in the picture on the right. Another roadway, captured undamaged, is crossing the "Autobahn" by road bridge. Providing room for four to six cars abreast in either direction, these roads have no level-crossings

ON THE BERLIN ROAD : A Soviet tank on the Berlin Motor Highway, one of Europe's most modern through roads which lead to the German capital by the quickest route

THE FIGHTING IN BRESLAU : A Soviet-occupied street in the city which the Germans converted into a "hedgehog," but which the Russians by-passed in their drive towards Berlin. Tanks and guns knocked out by the Red Army litter the roadway before a background of wrecked buildings

WOMEN WHO FLY FOR RUSSIA : Major Yevdokia Bershanskaya and some of the pilots under her command return from a combat mission over the German lines. A number of them have been decorated for their feats



HOW GENERAL PATTON'S FORCES ADVANCED TO THE GERMAN CITY OF COBLENZ, AT THE CONFLUENCE OF THE RIVERS MOSELLE AND RHINE, FACING HISTORIC AND PICTURESQUE EHRENBREITSTEIN—a view looking to the north and showing the two bridges across the 400-yard-wide river—*Drawing by E. G. Lambert*

Along the Western Front

COBLENZ AND REMAGEN

Where the Allied Armies Stand on the West and the East Banks of the River Rhine

—Special Sphere Drawings

From its position at the head of the Moselle Valley, with its hundreds of vineyards clothing the sloping hills, Coblenz could not fail to become a flourishing town. In medieval and later times, the town grew up on the Moselle banks rather than the Rhine; but in more modern times the process has been reversed, and extensions have all been towards the Rhine banks and the east. The medieval history of the place concerns Electors and Archbishops when the Holy Roman Empire was a power in Central Europe. In the time of the Emperor Henry II, Coblenz was granted to the Archbishops of Treves (Trier), who had a great liking for the place and spent most of their time either in Coblenz itself or in Ehrenbreitstein.

General Patton reached the town after a great dash through the Rhineland; by March 19 the town had been cleared of its last snipers, and it was announced that the whole of it was in our hands, with the enemy forced back to the east side of the 400-yard-wide river. The last group of German soldiers left within the city tried to surrender to the Americans when it became obvious that further resistance was useless: as they did so, Gestapo men inside a building opened fire on them—proving themselves real Nazis to the very bitter end!

How the final advance towards Coblenz was made by General Patton's men is indicated in the special diagrammatic view reproduced above.

THE STRANGE STORY OF ANDERNACH: THE ATTEMPTED FLIGHT OF THE VILLAGERS BY FERRY ACROSS THE RHINE, and the cutting-off of the fugitives who, after trekking eastwards, had to turn back to their homes once again—*Drawing by H. P. Burton*

The civilians who tread the roads back from the Rhine are those who tried to race the advancing Americans and cross to the safety of the eastern bank. But the tanks moved faster than they did, and they were cut off between their torn villages and the long armoured arm that shot out suddenly in a semi-circle in front of them. Some of them reached places like Andernach, which lies just above Coblenz, from villages lying close to the Rhine like Polch or Keyrig; but they found that the solitary ferry operating between the two banks was for German military personnel only. Then Andernach was captured, and these confused people turned west again, with their dog-drawn carts, farm-carts, bicycles and wheelbarrows piled high with their belongings, and began the long trek back. They know that they cannot expect help from their conquerors, though some of the more courageous try to win over American soldiers by being friendly

THE FIGHT FOR REMAGEN BRIDGE, WHICH ENDED WITH THE COLLAPSE OF THE CENTRE SPAN. The Allied anti-aircraft defences in action against enemy raiders. The plane in the foreground is a F.W. 190 : behind it is a Ju. 88—both are trying to bomb the railway bridge ; in the distance, out of range of the barrage, are Allied fighters waiting to engage the raiders—*Drawing by Roland Davies*

The enemy's first reaction when he learned that the Rhine had been crossed by way of the Remagen bridge was to despatch a variety of dive-bombing aircraft in an endeavour to smash the vital connection between the east and west banks. The Allies countered by bringing up air support from four different Air Forces, so that an effective screen might be placed above this important link. The enemy air attack upon this target varied considerably. Sometimes there would be an atmosphere of determined ferocity, as the result of which the enemy lost heavily in planes, although on some occasions slight damage was effected on the bridge structure. At other periods the attack waned, a few desperate planes attempting the difficult task of eluding our patrols. These were steadily maintained in view of the possibility that the enemy might concentrate a very heavy air attack. The artillery menace to the bridge had, of course, also to be reckoned with ; but as the size of the bridgehead steadily extended both to north and south and in depth towards the big Cologne autobahn, the bridge gradually became a less easy target. Finally, the centre span collapsed owing to earlier damage to its foundations : but by that time our already sizeable bridgehead on the east bank was being reinforced by means of pontoon bridges

THE GREAT RAILWAY BRIDGE AS SEEN FROM THE EAST BANK OF THE RHINE, just before the collapse of the centre span. It was 1,300 ft. long and bore a continuous line of reinforcements and supplies to the bridgehead before it fell into the river on the afternoon of March 17

A HUGE TRAFFIC JAM AT THE APPROACHES TO THE BRIDGE on the west bank of the Rhine. Due to constant shelling of both the Remagen and pontoon bridges, First Army traffic is held up for about five miles. This picture was taken on the outskirts of Bodendor, as lorries and jeeps waited to go forward

FOLLOWING UP IN THE TRACK OF THE ADVANCING BRITISH AND CANADIAN FORCES: A SCENE WITH GENERAL CRERAR'S ARMY AT THE NORTHERN END OF THE LINE. Red Cross men at work among the German wounded—a task which must be undertaken warily owing to the presence of numerous enemy booby-traps of all descriptions—*Drawing by W. G. Whitaker*

SCENES BEHIND the WESTERN LINE

Clearing Up Behind the British Army: And the Vast Quantity of Allied Equipment —Special *Sphere* Drawings

Strewing the edges of the roadway leading to the Rhine are numberless evidences of the heavy losses the enemy has sustained in guns and armour of all kinds. In the above drawing a knocked-out German field-gun lies helpless by the side of the village street; across its trail stretches the prone body of a dead German gunner. Red Cross men have already arrived in the village and are engaged in their work of removing the wounded and the dead; but they have to approach this gun with caution—a booby-trap may lie concealed amid some part of the wrecked mechanism, in spite of the presence of the body of the fallen German soldier left behind by his retreating comrades. When the enemy has time at his disposal there is no limit to the deadly ingenuity with which he will place his traps for the unwary. Recently a cleaning-up party looked suspiciously at a chair. They examined it warily from several angles. The chair was carefully shifted, and there was a shout of warning. A piece of wire was then observed to lead through a crack in the tiled floor: the explosive charge discovered beneath would have killed all the search-party!

GREAT RAILWAY GUNS FORMERLY USED BY THE GERMANS ARE CAPTURED BY THE U.S. SEVENTH ARMY—Two views of one of the great weapons now lying abandoned at Leoron Station. Six of them were captured by the Americans in this area. Their size can well be gauged by the men standing on the colossal barrels. They usually operated only by night

In their rapid advance during recent days, much German equipment has fallen to the Seventh Army, including several 240-mm. railway guns. These were mounted on long steel bases on wheels and were usually kept in tunnels during the daytime. As soon as darkness fell, they were pushed out of their hiding-place by an engine, and the German gunners would begin their bombardment of American positions—after which they were again shunted back, to their place of concealment. These colossal guns were greatly prized by the Germans, as their construction was considered by them to be a major piece of engineering

TIMBER FROM THE REICHSWALD TO AID THE ALLIES: A tree falls after being felled by men of the Canadian Forestry Corps in Germany's State Forest, recently captured by the Canadian First Army

OUR CONVOYS ARE SCREENED FROM THE ENEMY'S EYES: Men of the 602nd Engineers Camouflage Battalion have made a special platform on the back of a weapon-carrier in order to hang netting from "A" frames and pole tripods to form a road-screen to conceal the passage of convoys moving up to the front. At some parts of the Western Front, where troops movements must be hidden from enemy eyes, smoke-screens are used as the most effective method of blinding the German gunners. Under cover of these, vast quantities of men and equipment can be moved quickly and efficiently

ALLIED EQUIPMENT MOVES UP TO THE FRONT

Correspondents have recorded that German prisoners seated beside a road along which the mechanised might of the Allies was rumbling eastwards have often stared agape at the sight before them. Some have acknowledged that the fight is evidently over for Germany. The Reich can no longer resist, with any hope of success, such an overwhelming exhibition of mechanised power. Every form of tank and gun may be seen rolling by. The anti-tank guns themselves are now a remarkable sight. They have grown in size, as may be seen in our artist's drawing below. The number of men carried upon them is an interesting feature of their development. Not only guns and offensive weapons, but bridging material is being moved up ready for the inevitable river crossings. Once the scene of bitter fighting, the Reichswald, Germany's State Forest, is now providing timber for the Allied Armies on the Western Front

Thousands of feet per day are being cut by members of the Canadian Forestry Corps, who have undertaken the task of trimming and supplying the baulks which are so essential for the construction of bridges, etc. A considerable number of the trees have been blasted by bomb and shell splinters—which tends to make the job of felling them all the more hazardous

HUGE TANK-DESTROYERS PASS THROUGH THE SLAG-HEAPS OF THE COLLIERY DISTRICTS AROUND COLOGNE: These colossal weapons of war are protected—in addition to their armour—by piles of sandbags heaped on to front and sides; they act as their own anti-aircraft batteries, and carry on board a great number of men. Note the big iron scoops in front for clearing a way through the heavy mud—*Drawing by W. G. Whitaker*

THE GERMAN CITIZEN AND THE WAR

Life for the Nazis Under the Allied Occupation of the Rhineland

On right—As the Allies advance into Germany, they are finding Russians, Poles, French, Belgians, Spaniards, Armenians, Algerians, Czechs, Italians, Dutch and others who were all harnessed—many of them forcibly—to the German war machine. Three thousand six hundred of these "Displaced Persons" were recently brought in to a dispersal point behind the fighting line in preparation for their repatriation to their respective countries. They met at the former German political prison at Ansalt, where they were fed before being sent off to their destinations

THE ALLIES FACE THE PROBLEM OF "DISPLACED PERSONS" FOUND IN GERMANY: A general view of the refugees being fed in the prison camp at Ansalt before leaving on the first stage of their journey back to their respective countries

RUSSIANS FREED FROM GERMAN LABOUR CAMPS: A group of peasant women from Minsk. At an orphanage in the Dutch frontier town of Venlo, a Repatriation of Displaced Persons Centre has been set up. Over 1,000 people, from Holland, Russia, Poland, France, Belgium and Italy, have passed through the Centre. The people are medically examined, registered and fed, and sleeping accommodation found for them before they go home or to an assembly centre

A SCENE IN ANSALT, former German political prison now being used to house "Displaced Persons" found in Germany. A group of Ukrainian women and their children are here being fed in the prison yard before their departure for home

YOUNG GERMANY: Typical school-age Nazis at Bedersdorf, who are providing the biggest rehabilitation problem

A GERMAN CIVILIAN CONTINUES TO ACT AS MAYOR: In the town of Repelen, occupied by troops of the U.S. Ninth Army, the Assistant Mayor signs a curfew proclamation which is to be posted about the town telling the citizens what they must do by military order

THE FATE OF THE NAZI: Constant Taendan 55 years of age has been a Nazi for 18 years: he was Governor of Ansalt Prison since 1925. He is now being confined as a prisoner in his own gaol by the Americans

PSYCHOLOGICAL WARFARE AGAINST THE GERMANS: An American sergeant of the Psychological Warfare Branch standing in a doorway of Coblenz as he talked to the Germans remaining in the town and told them what awaited them if they did not surrender. His voice was picked up by the tiny microphone which he wears clipped to his upper lip, and amplified by a sound track which broadcast his voice all over the town. Many Germans came out soon after his talk

LIFE in SHELL-STRICKEN KREFELD

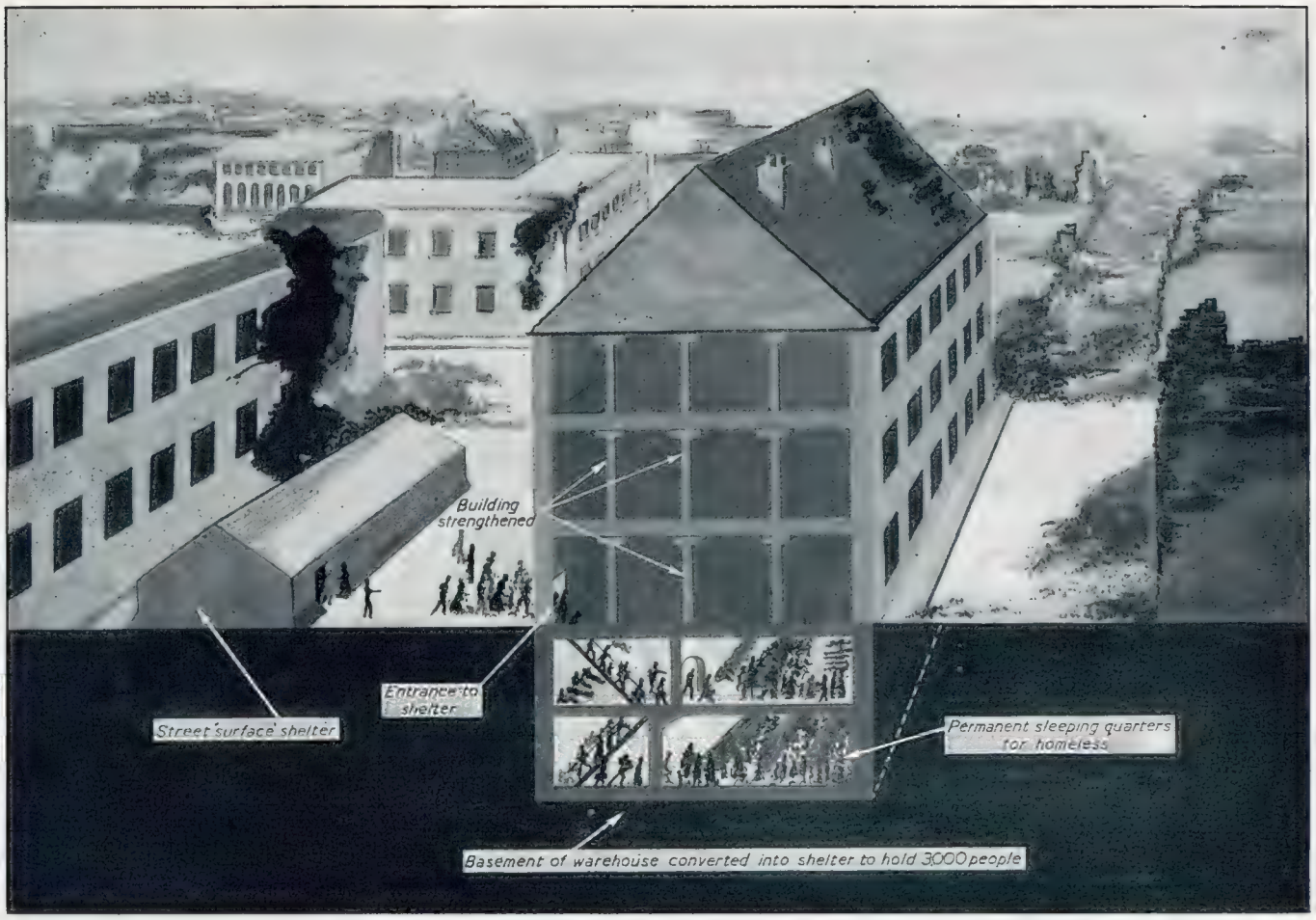
Krefeld, on the west side of the Rhine, was a great German industrial centre which suffered considerably under the Allied air bombardments.

After its capture, it was found that there were twenty large underground shelters in which its citizens took refuge and lived for long periods on end when the town was being hit from the air. By no other means could the population have survived the heavy blows aimed at their factories and railways and other war centres.

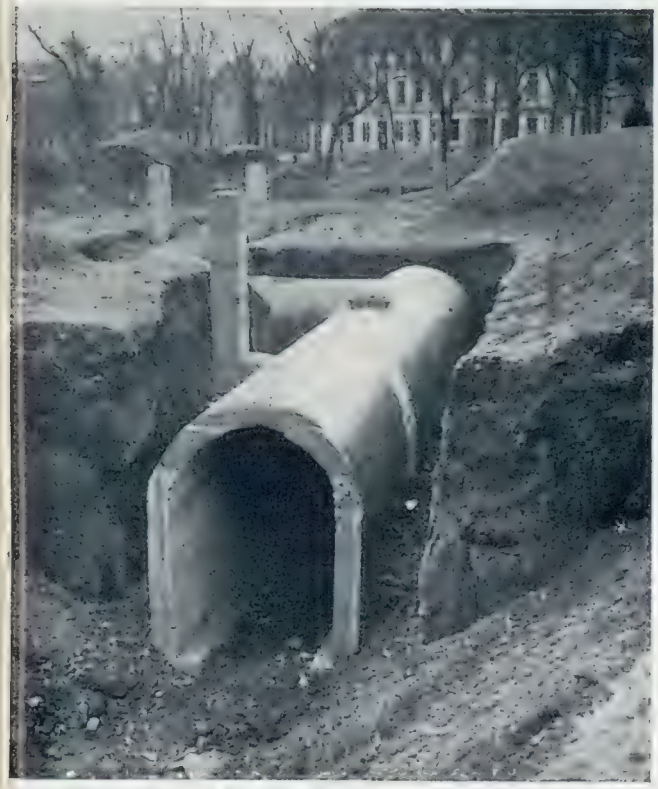
Some of the shelters had been built on a most elaborate scale—one, at least, being capable of housing no fewer than 3,000 people.

The drawing on the right gives an idea of the way in which the authorities had prepared for air assaults. The upper walls of many of the buildings were strengthened to withstand anything but a direct hit. Below the ground-level were strong basements which had been converted into sleeping quarters for workers and the homeless.

The vast majority of the occupants were apathetic and defeatist: many of them had spent whole days and nights in the fetid atmosphere, only coming out into the streets after the Allies had entered the city



HOW GERMAN CITIZENS HAVE BEEN ENABLED TO LIVE THROUGH PERIODS OF INTENSE AIR BOMBARDMENTS. A diagrammatic view showing how buildings in the Rhineland have been strengthened to give shelter to large numbers of Germans. Many of the latter have spent whole periods at a stretch in such underground centres—*Drawing by B. C. Wood*



AN AIR-RAID SHELTER IN COBLENZ: An unfinished section of a concrete structure put up in one of the streets. Many similar shelters were found in other open spaces of the city. For many days prior to the capture of Coblenz, the people lived day and night in their shelters

HOW GERMANY IS SETTLING DOWN UNDER ALLIED MILITARY GOVERNMENT: The Burgomaster of Bedersdorf has been appointed by the Third Army Military Government to assist in the town's administration. He is here discussing the next meat-distribution scheme with an American soldier, seen on the right, while other German officials stand by

—AND THE SHELTERERS. Some of the 120 shelterers living in this surface "Bunker" in Coblenz come out for the first time in ten days after the city's capture

A CAMP OPERATED BY THE U.S. THIRD ARMY FOR THE HOUSING OF GERMAN CIVILIANS from the captured and damaged town of Bedersdorf. The Germans alleviate their pressing food problem by the threshing of wheat and the slaughter of cattle under the supervision of A.M.G. The camp has been built out of imported sections of American material

THE NEW AND POWERFUL INVASION WEAPON now being used in the war by sea in the Pacific. During recent months the rocket has come—well and truly—into its own. In the hands of the Allies, it is being used both on land (as in Germany, before a big offensive) and at sea (before the landing troops go ashore for invasion). This picture gives an idea of the number of rocket projectors carried aboard the special Mechanised Landing Craft used against the Japs in the Pacific islands. Hundreds of shells discharged from these projectors put up a barrage in the face of which the defenders on shore cannot live

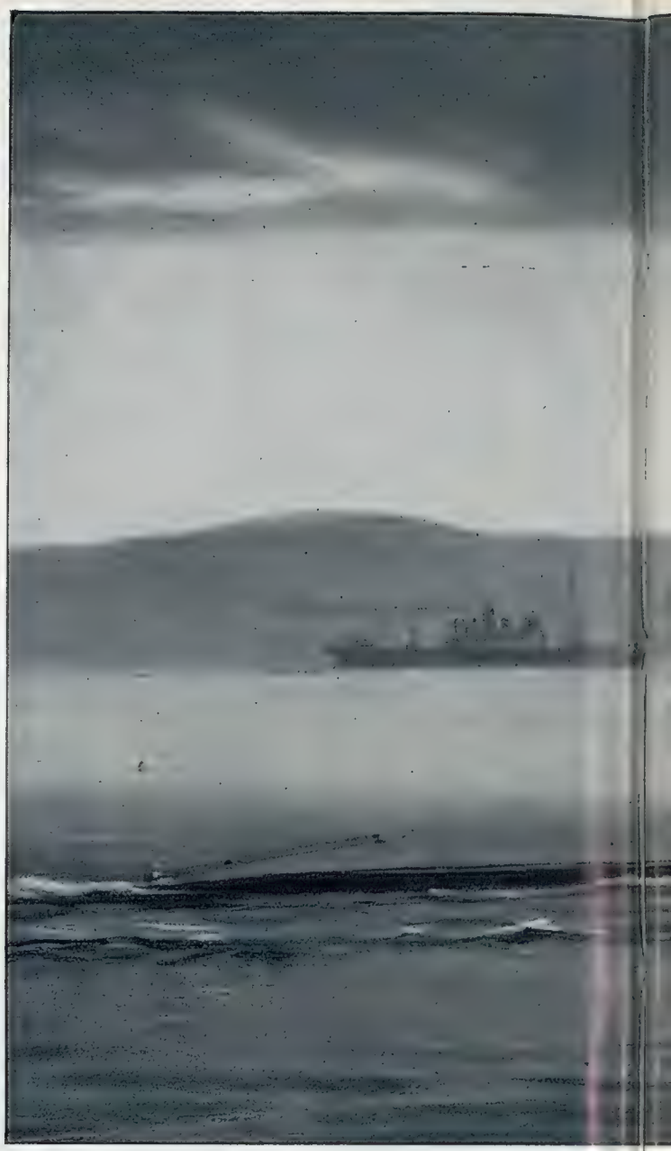
THE WAR BY SEA

Scenes from European and Far Eastern Waters

Depicted by Sphere Artists and in New Photographs

Enemy submarines have been increasing their effort against Allied supply lines at sea during the past weeks. They have appeared in home waters, their periscopes feathering areas in which they had not previously been seen for many a long month. Now they are attempting to catch our convoys unawares in waters which our sea captains and convoy commanders had come to regard as more or less safe. In the drawing on the right, Mr. Montague Dawson shows a U-boat surfacing after spotting a tramp steamer slowly plodding along close inshore. The commander is debating whether to attack or to look for something bigger.

The First Lord, in a speech in the House of Commons, declared recently that "the enemy is employing new equipment, and new types of U-boat may be used at any time. With this new equipment we may be sure they will develop new tactics. In recent months, after a long period of comparative quiet, U-boats have appeared in the coastal waters round the United Kingdom. So far their successes have been small, but we believe that the enemy has been making great efforts to renew the U-boat war on a big scale"



WITH THE BRITISH NAVY IN EASTERN WATERS: THE FRENCH BATTLESHIP "RICHELIEU" AND THE BRITISH AIRCRAFT-CARRIER "FURIOUS" (on right) in heavy weather against the Japs. "Furious" is the oldest carrier still in service in the Royal Navy

A terrific sea is hitting the bow of the *Furious* as she plunges through the water at speed. This vessel was intended as a cruiser: she was begun in June 1915 but prior to completion was redesigned and equipped with a flight-deck. She was completed in July 1917, but was rebuilt between November of that year and March 1918. Early in 1939, her present mast and superstructure were added on the starboard side of the flight-deck. The height of the latter from the water-line is 75 ft. Her speed is 30 knots, and she carries an official complement of thirty-three aircraft. The battleship *Richelieu* is one of the most modern of French warships: she has a displacement of 35,000 tons and is armed with 15-in. guns. She and her sister-ship *Jean Bart* were partially rearmed with American guns in

GERMAN U-BOATS APPEAR IN BRITISH HOME WATERS, AS PART OF THE ENEMY'S GREAT EFFORT TO RENEW THE SUBMARINE WAR ON A BIG SCALE. An ocean-going U-boat (of 740 tons) surfaces alongside an English coaster close inshore before deciding whether to attack. After a long period of comparative quiet, German vessels have again been appearing round the United Kingdom—*Drawing by Montague Dawson*
(*See note at left*)

ather during operations

Rhelieu is one of the most a isplacement of 35,000 tons, ad her sister-ship *Jean Bart* ns in 1943

THE ROYAL NAVY BRING OUT 525 NORWEGIANS FROM BEHIND THE GERMAN LINES : The scene in the Galten Fiord as the persecuted civilians were taken aboard the British destroyers in broad daylight after three months of intense suffering

Racing in broad daylight down a Norwegian fiord 60 miles behind the German lines at North Cape, four destroyers from the British Home Fleet have rescued 525 Norwegians from the Germans For three months these Norwegians—mostly women and children—had been hiding from the German slave patrols in caves on the snow-covered mountains of Soroy Island. A small Norwegian military mission had landed earlier warned them to stand by and they were ready when the destroyers, led by Captain J. H. Allison, D.S.O., in H.M.S. *Zambesi*, with all guns manned, swept down Galten Fiord at three o'clock one afternoon. In three hours, the ships, with the rescued Norwegians, were steaming back at full speed. Food and clothing were issued, and the 525 Norwegians landed at a British port. They had terrible stories to tell of their treatment by the Germans who had burnt to the ground every house on the island

THE SEA AND AIR BOMBARDMENT OF IWO-JIMA BEFORE THE LANDING —An artist's impression of the spectacle as destroyers went in close near a battered Japanese landing ship, run ashore after it had been wrecked by shells—*Drawing by Wm. McDowell*

THE CONQUEST OF IWO-JIMA COMPLETED

Pictures from the Volcanic Island, Now Entirely in American Hands

On left—The American destroyers have gone almost up to the beach to hammer the gun positions on shore, while bombers roar over the slopes of the old volcano to assist in the work. Near the island is the torn hulk of a large Japanese landing craft of curious shape which had previously been sunk by American bombs. The strangely-sloped deck and high forecastle of this craft suggest that troops were carried in the waist and only comparatively few vehicles in the fore-part of the ship.

The island of Iwo-Jima was completely captured by the Americans on March 16; this was admitted to be the case from Tokyo itself soon afterwards.

OPENING UP ON THE JAP ISLAND POSITIONS: This gun-crew of the U.S. Marine Corps have just gone into action and have fired their first shell at the enemy. By March it was announced that the island was entirely in the hands of the invaders and that the whole Jap garrison had been accounted for

SMOKE FROM U.S. BOMBS TRAILS OVER THE VOLCANIC ISLAND: A cloud of black smoke hovers over Iwo-Jima, in the Volcanic Group during one of the many aerial attacks on the key Japanese bastion. In the left foreground is the cratered Mount Suribachi. Iwo's ridged and rocky terrain offered difficult natural obstacles to the invaders, who met stiff Japanese opposition and strongly-entrenched enemy installations. Two days after the initial landings, the Americans had gained control of the southern third of Iwo and were in possession of one of the Japs' airfields

BRINGING IN SUPPLIES FOR THE FIGHTING MEN ON THE ISLAND: The crowded scene on one of the small beaches as coastguards and Navy men brought their landing craft right up on to the volcanic sands to unload their stores and equipment

THE MARINES GAIN POSSESSION OF MOTOYAMA AIRFIELD NUMBER ONE. Suribachi volcano is seen in the background, with an American plane flying above it. The Marines have dug their guns into the loose earth ready to repel any counter-offensive by the Japs

DURING THE WAR BY SEA IN THE PACIFIC, A JAPANESE AIRMAN MAKES A SPECTACULAR "SUICIDE DIVE" TOWARDS THE DECK OF AN AMERICAN CARRIER. The scene as the enemy plane came flying through an intense hail of "flak" from the carrier's anti-aircraft guns—*Drawing by Roland Davies*

Just as on land the Japanese infantryman presents peculiar difficulties to an attacking force by reason of his ferocious and often-times inhuman methods of fighting, so does the Japanese pilot, on occasions, stagger the American Air Arm by his suicidal tactics. He may not be anything wonderful as an air fighter, but his willingness for self-immolation is amazing. If it is perceived that an approaching plane is about to immolate itself on the flight-deck in order to ensure that its bomb-load may explode to the best advantage, there is a call for great coolness and dexterity in aim on the part of the anti-aircraft gunners. THE SPHERE'S artist depicts above a Japanese torpedo-bombing plane going "hell for leather" for an aircraft-carrier and running the gauntlet of an intense A.-A. barrage to achieve its object

THE RUGGED COASTLINE OF IWO-JIMA, strategic island only 700 miles from Tokyo, is only partly visible as guns of the U.S. Fleet hurl round after round against an enemy position on the shore. U.S. Marines, who formed the spear-head during the opening phases of the battle, experienced one of their hardest battles for over a century during the storming of this island fortress

AN AMERICAN PILOT RETURNS TO HIS CARRIER AT SEA after a flight to Tokyo: The fighter is coming in for a perfect landing, after a successful sortie against military targets in the Tokyo area. On the left of the picture members of the American crew wait for the aircraft to come to a standstill, so that they may at once clear the landing-strip on deck for other returning raiders

A BROADSIDE OF ROCKETS IS DISCHARGED FROM A MECHANISED LANDING CRAFT: The rockets are quite visible against the clear sky as they head for a distant target. The addition of these weapons to small craft has added tremendous fire-power to the Allied Invasion fleets in every theatre of war. Their mobility and lack of recoil make the rocket-projectors ideal for supplying an additional weight of shells during close-support missions in amphibious operations

THE R.A.F. ATTACK BRIDGES ON THE BURMA-SIAM RAILWAY: The main-line bridge between Milestones 44 and 45 which was completely destroyed, while the by-pass bridge also suffered considerable damage. This attack was carried out by Liberators of the Strategic Air Force, which is part of the Eastern Air Command. It was one of a number of assaults directed at severing the Jap communications running back to their bases in Siam. After the previous demolition of the main line, the Japs erected a by-pass bridge: this too was subsequently hit and damaged by bombs from the Liberators

ANOTHER SUPPLY ROUTE IS CUT: The broken rail bridge at Kalumpe; the central span, built of steel lattice-work, lies in the river after a Liberator attack. On the right is the ferry-point, with roads leading down to it on both sides

The War in the Air

The R.A.F. on the ATTACK in Burma, Yugoslavia and Norway

—And Two Pictures Taken During the Air Offensive Over Germany Itself

Four of the pictures reproduced here were taken recently in Southern Burma, when Liberators of the Strategic Air Force of the Eastern Air Command attacked bridges and airfields used by the Japs. Three of the railway bridges which they smashed were on the Burma-Siam railway about 10 miles to the south of Thanbyuzayat. The R.A.F. squadron which added the three bridges to its score on this occasion has already destroyed five bridges since the beginning of the year, including the important Nalcorn Chaisri and Fajburi bridges. The aircraft attacked from a very low level with 1,000-lb. bombs, which ripped the tracks and trestles from the bridges—two of them with spans of 200 ft. and one of 50 ft. Hits were also scored on the railway sidings at Thanbyuzayat

ANOTHER GERMAN OIL PLANT IS DEVASTATED BY THE R.A.F.—the wrecked refineries at Harburg, near Hamburg. This is the condition of the Rhenania Ossag A.-G. and Ebano Aspaltwerke A.-G. as they appeared to reconnaissance aircraft on March 9 after Bomber Command had attacked them on the night of March 7. Some reconstruction work had been carried out after earlier attacks, but considerable new damage was inflicted on this occasion. No fewer than 1,250 aircraft were sent out on March 7 by Bomber Command to carry out a series of heavy blows at many key-points in the Reich

A FRENCH-MANNED MARAUDER IS HIT OVER THE TARGET: To reach their targets, American and French airmen of the First Tactical Air Force must daily brave the heavily-defended region over "Flak Valley" in the Upper Rhine area over Karlsruhe. This French-manned B-26 Marauder was caught in a burst of German flak: it spun to earth but a few seconds after its tail had been severed by a German shell with but little chance of escape for the crew

THE MAIN RUNWAY AT LEWE AIRFIELD, used by the Japs in South Central Burma, as it was being attacked by R.A.F. aircraft. Bomb-bursts are seen covering most of the runway

COASTAL COMMAND MOSQUITOES ATTACK ENEMY SHIPPING AT AALESUND, IN NORWAY: A heavily-armed, medium-sized merchantman is hit by rockets during the attack on the harbour carried out on March 17. Aalesund is one of the most heavily-defended harbours along the Norwegian coast. It was attacked by Mosquitoes of Coastal Command on Saturday, March 17. Five of the six merchantmen found in the harbour were left either on fire or smoking after repeated hits with cannon and rockets. This picture was taken whilst the British attack was in progress: part of the town is seen in the background of the view

AN R.A.F. LIBERATOR flying above one of the 200-ft. bridges in Burma after it had been destroyed by 1,000-lb. bombs. Fires in the adjacent forest are still smouldering, and debris litters the ground

***On left*—GERMAN SHIPS ARE ATTACKED DOWN THE "LIFT-SHAFT" of a narrow Norwegian fjord.** Diving at more than 300 m.p.h., R.A.F. Coastal Command Beaufighters recently attacked shipping in the Vindspol (Midgulen) Fjord in Norway. Sweeping down the side of this 2,000-ft. mountain, through a gap of only 350 yards, veteran crews of Coastal Command, firing rockets and cannon, battered two cargo passenger vessels, leaving them in flames. This picture shows the rockets actually streaking down the "lift-shaft" to disable or destroy one of the ships. It gives a graphic impression of the hazards faced by our aircrews in their daring penetrations of the Norwegian fjords

BEAUFIGHTERS OF THE BALKAN AIR FORCE ATTACK GERMAN TARGETS IN YUGOSLAVIA: *On left*—The hotel and annexe at Zolla. *On right*—Twenty-two hits with rockets on buildings and strong-points at Gospic—and the damage they caused

An hotel and annexe believed to house a German Headquarters at Zolla, 25 miles north-east of Trieste, was recently attacked by S.A.A.F. rocket-firing Beaufighters of the Balkan Air Force. The picture on the left shows it smothered in smoke during the attack. Half the roof of the hotel (obscured by smoke on the left of the picture) was blown off by the rocket projectiles and a salvo also hit the annexe. Other German-occupied buildings in the village were also set on fire. In the picture a further salvo of six rockets is speeding towards the target to add to the destruction. The view on the right was taken at Gospic, also in Yugoslavia, inland from the Podgorski Channel. S.A.A.F. Beaufighters here scored twenty-two hits with their rocket projectiles on enemy-occupied buildings and strong-points. This photograph was taken during the attack, and shows fires already burning strongly

MR. STETTINIUS GOES TO MEXICO for a conference with representatives from the American Republics: This picture was taken in the Jewel Room of the Chapultepec Castle, in Mexico City. It shows the delegates during the opening session of the Inter-American Conference to discuss problems of war and peace. Seated from left to right (beginning at the third from the left) are—Dr. Joaquin Fernandez, Foreign Minister of Chile; Mr. Nelson A. Rockefeller, U.S. Assistant Secretary of State; Mr. Edward R. Stettinius, Secretary of State; and Dr. Gerard Lescot, Secretary of Foreign Affairs for Haiti

WAR PICTURES FROM FOREIGN COUNTRIES

THE PRESIDENT REPORTS TO CONGRESS on the Yalta Conference. Seated before a battery of microphones (which broadcast his speech to the United States), Mr. Roosevelt is here reporting on the "Big Three" Conference to a Joint Session of Congress. He told of the decisions reached, and asked Congress and the American people for support in negotiating a world peace "based on the sound and just principles of the Atlantic Charter." He promised that both Germany and Japan will be beaten into "unconditional surrender" and their militarism destroyed for ever

AN AGREEMENT IS SIGNED BETWEEN U.N.R.R.A. AND THE ITALIAN GOVERNMENT: Prime Minister Bonomi signing on behalf of Italy; on his left is Mr. Spurgeon M. Keany, U.N.R.R.A. Italian Mission chief. On the afternoon of March 9, an agreement was signed between the Italian Government and the United Nations Relief and Rehabilitation Administration for a relief programme in Italy. The representatives of the two parties were Prime Minister Ivanhoe Bonomi and the U.N.R.R.A. Italian Mission chief, Mr. Spurgeon M. Keany. U.N.R.R.A. is to furnish supplies and services costing up to £12,500,000 sterling in foreign exchange, for three general programmes in Italy. The cost of the supplies and services incurred in foreign exchange is to be borne entirely by U.N.R.R.A. without charge to Italy. The Italian Government will have the responsibility of distributing the supplies

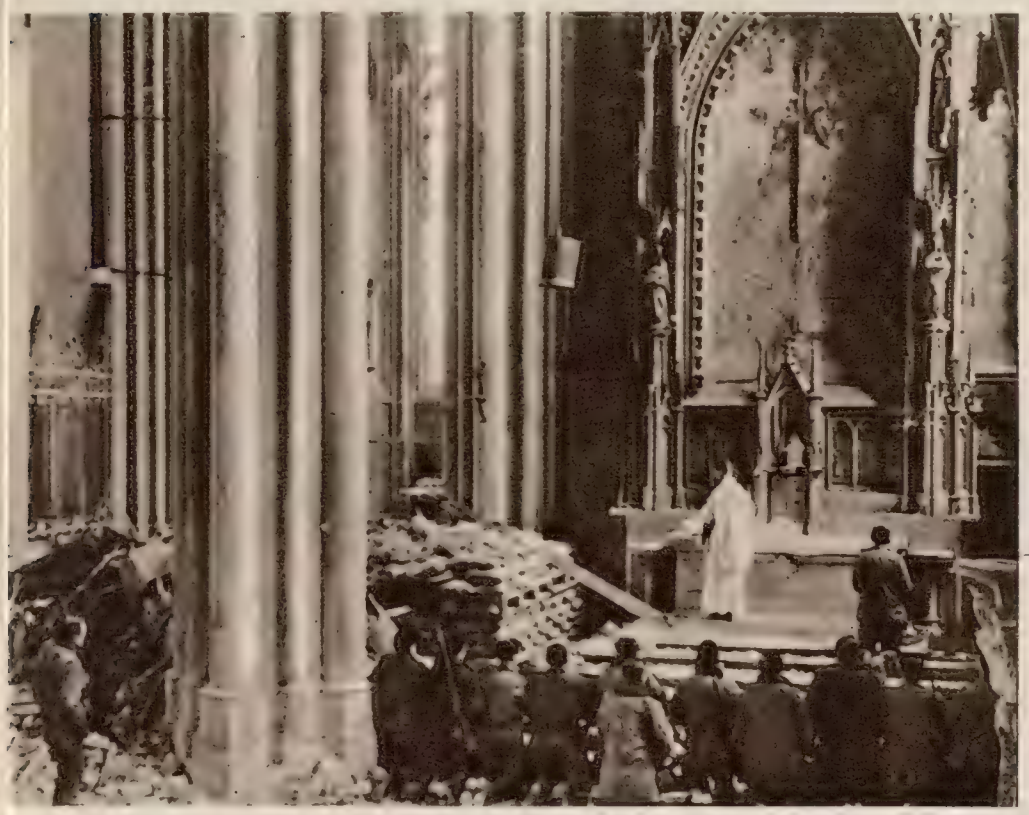
QUEUES BEGIN IN NEW YORK FOR CIGARETTES: As the cigarette shortage grows more acute, the lines outside tobacco stores in New York get longer and longer. Some stores have instituted their own system of rationing, preserving their meagre supply for regular customers. Some are impartial, setting aside one hour a day to serve all-comers. Here is a line outside a store in Nassau Street, which sells one packet to everyone for an hour, beginning at 3 p.m.

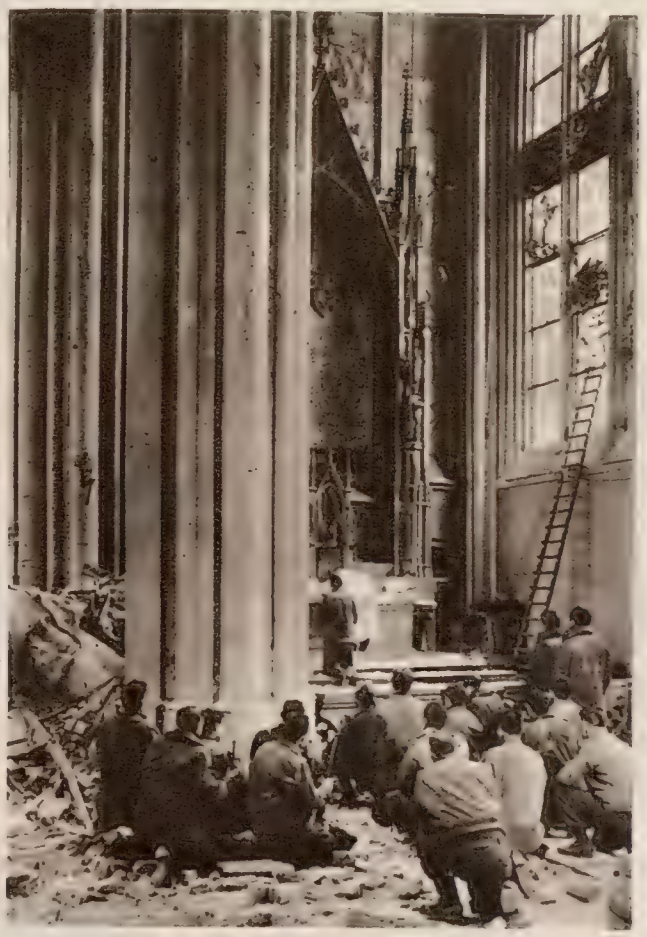
ISLANDS OF ICE IN THE HUDSON RIVER interfere with the normal shipping routine: A small merchant vessel, dwarfed by the big icebergs in the river which runs through the city of New York, is here picking its way through the six-inch floes. This picture was taken from a helicopter of the U.S. Coastguard Service, which spots marooned vessels and calls the Coastguard ice-breakers to their aid. These ice formations are said to be the worst for a whole decade in this area

TURKEY FINALLY DECIDES TO ENTER THE WAR: At the special session of Parliament held on February 23 Turkey declared war on both Germany and Japan—so that she could take a place at the forthcoming San Francisco Conference. Mr. Sukru Sarajioglu, the Prime Minister, is here seen closing the debate, after which members voted for war

FOOD FOR LIBERATED HOLLAND : One shed full of foodstuffs at the Civil Affairs Inland Stores. This picture shows a little of the help which the Allied Nations are giving to countries liberated from German occupation. It was taken at a Civil Affairs depot, which supplies a vast amount of foodstuffs daily, and is one of many set up all over the various countries concerned. The calory value issued to the Dutch is now 2,000, admittedly insufficient, but a great improvement on the 400 calories issued by the Germans. This ration is steadily increasing, and will soon be almost normal. The main difficulty is transport

THE NEW REGENTS OF YUGOSLAVIA : Dr. Sedjan Budesavilievitch, the Serbian Regent (*on left*) ; M. Dushan Sernetz, the Slovene Regent (*on right*). On March 5, 1945, Dr. Budesavilievitch, Dr. Manditch and M. Sernetz, the new Regents of Yugoslavia, were sworn in. The ceremony took place in the Green Room of the Parliament Building in Belgrade. Officiating at the ceremony were the Catholic Bishop of Belgrade, Dr. Ujichitch, and the Metropolitan Josif, acting Patriarch of Yugoslavia. The chiefs of the British, American and Russian Military Missions, Dr. Ivan Subasitch and members of the Presidium attended the ceremony





TWO PICTURES TAKEN INSIDE COLOGNE CATHEDRAL AFTER THE ALLIED OCCUPATION : As American troops pass through the city, they stop to attend a service held in a chapel in the bomb-blasted and forlorn building before going up to the front

As stated in last week's issue, the great Dom, or Cathedral, has suffered no structural damage, but it has, of course, been affected by bomb- and shell-blast. Throughout all the tribulations of Cologne, two priests have remained in the building, occupying one room and conducting private services. Now the Cathedral is being visited by soldiers passing through on their way up to the fighting line. A priest conducts the services within the sandbagged interior for the special benefit of these men, one of whom usually acts as server at the altar

CLOTHING DISTRIBUTION FOR GREEK CIVILIANS IN ATHENS : *On left*—Selected garments being checked and ration-cards cancelled. *On right*—A young boy is fitted out by his parents

The whole of one floor of the largest store in Athens is being used as a clothing distribution centre for Greek people who have lost their belongings as a result of the civil war. Civilians falling into this category are checked by Military Liaison, who consider whether their cases justify the issue of clothing. On presentation of their ration-cards, they are allowed to choose whatever clothing they require, and their ration-cards are cancelled accordingly. All the clothing has been given, and is reconditioned before issue. No charge is made

STADIUM STREET, IN ATHENS, becomes Winston Churchill Street : In honour of the Prime Minister of Great Britain, Stadium Street, Athens, has been renamed Winston Churchill Street. The ceremony was attended by Brigadier Mainwaring, of the General Staff, representing General Scobie, and British and Greek officers. The Mayor of Athens, M. Aristides Skliros (above), made the short speech renaming the street

READY FOR THE RHINE CROSSINGS

Facts and Figures about the Bailey Bridge, "the Most Important Weapon in the Allied Armament" Described by CHARLES GRAVES

"THERE is never enough Bailey bridging. This bridging is quite the best thing in that line we have ever had. It does everything we want. With extensive demolitions you need masses of Bailey bridging, and I hope it is produced in great quantities: it will be needed wherever we operate in Europe. Sappers are getting very skilled at Bailey bridging; even that 300-ft. gap over the Trigno, with all the piers blown, was bridged in thirty-six hours after the bridge ceased to be under aimed small arms fire."

So wrote Field-Marshal Montgomery to the Director of Military Operations at the War Office shortly before D-Day.

The Bailey Bridge is considered by many military experts to be perhaps the most important weapon in the Allied armament, and anyone who has toured Belgium and Holland, as I have done recently, can scarcely count the number of these bridges that he crosses in the course of a day. Actually, over 400 Bailey Bridges were erected in North-West Europe between D-Day and October 1944; in addition to 38 in Sicily, over 1,400 have had to be erected in Italy.

For many years the Experimental Bridging Establishment of the War Office had been trying to compete with the problem of designing bridges for tanks, the weight of which increased at the rate of x per cent. per month, and to which the final straw was usually added in the shape of a Transporter—normally after the bridge design was complete.

Up to 1937 the heaviest class of bridge was 19 tons: by 1939 the Matilda tank had arrived, starting at 23 tons and gradually increasing to 26 tons. To carry this load box-girder bridges and pontoon bridges had been redesigned for 24 tons, and were in production. To carry a Matilda with a Transporter was too much for the pontoon bridge.

Then the Churchill appeared on the horizon. This meant that the whole conception of bridge-building had to be altered.

In 1914 no armies carried girder bridge equipment, and pontoon bridges were limited to 2-ton axle loads, as nothing stronger was needed for the horse-drawn equipment of the field armies of those days. The appearance of mechanical vehicles and the early tanks suddenly made bridging equipment very important, and a girder bridge was designed. This was replaced by another type of box-girder bridge to which Lieut.-General Martel gave his name.

For some time Mr. Donald Coleman Bailey had, at the back of his mind, this idea of making a bridge girder out of panels, but never found the time to investigate it fully. To judge by the articles in newspapers when the Censors at last allowed the Bailey Bridge to be described, the military designers were in trouble and the situation was saved by some obscure civilian, described as a "Civil Servant" or even as a "draughtsman." The truth is that Mr. Bailey is a Civil Engineer employed by the Ministry of Supply, and is the Chief Designer of the Experimental Bridging Establishment which exists for no other purpose than for designing military equipment. And while the bridge was based on his original idea, it was developed by the Design and Experimental Staff at E.B.E., like all other military bridges, and Lieut.-Colonel Stewart and Major Jarrett-Kerr had a great deal to do with it.

In general, a military bridge has to embody the following features:

(1) It must be simple to put together in the field, as it will probably have to be erected in the dark, possibly under fire, on a hastily reconnoitred site.

(2) All parts must be interchangeable; different parts must not only look different, but must feel different in the dark.

(3) No individual part should be too much for six men to carry.

(4) All parts should be capable of being carried in 3-ton lorries.

(5) It must be able to take its specified load with the minimum factor of safety in order to save weight.

As has been seen, loads began to increase steadily after 1937: various attempts were made to adapt the existing equipment to carry the Churchill, but without success, and the War Office experts were all feeling very despondent when, driving back from an unsuccessful trial, Mr. Bailey produced his idea of a panel bridge, drawing it on the back of an envelope in the staff car.

After further discussion it was decided that all parts of the new bridge would have to be welded and made of readily available materials; the underside of the girders would have to be kept smooth for rolling on launching rollers; and no close manufacturing tolerances would be necessary. Weeks of calculation and experiment were put into the internal design of the panel and various forms of truss were considered. Eventually it was decided that "K"-shaped steel sections facing in opposite directions would be best.

Perhaps the most important feature was the simplification of all connections. Panels were designed with male and female jaws at their corners, and the joint was made by the insertion of a single pin to lock them together.

The bridge was originally designed for "dry gaps," but from the first the possibility of using it for the superstructure of a pontoon bridge was borne in mind. A "dry gap" is somewhat of a misnomer: the Royal Engineers call a "dry gap" any gap, whether across water or dry land, which can be traversed by a single span.

Within a month production of the pilot model was under way, the panels being delivered by road a dozen at a time in order to carry out further tests. The prototype bridge was erected on a flat field, about 2 ft. clear of the ground, then an old 1917 Mark V. tank was driven on to the centre of the bridge. A scissors bridge was then placed up the back of the Mark V and a timber platform erected on the top of it. Up this were driven two other tanks, so that both were poised, one in front of the other, on the top of the Mark V, in a nightmarish attitude. The bridge stood the test.

Drawings were now finalised with all speed; a number of manufacturing firms were persuaded to make the various bits and pieces. They included bedstead makers, confectioners, football pool proprietors, papermakers, garages and window frame manufacturers, in addition to the large engineering concerns.

But, having made a Bailey Bridge, how does one get it across a river? Well, you have to employ a "launching nose," a light structure, built in prolongation of the girder, which extends far enough over the gap to reach rollers placed on the far bank just before the centre of gravity of the whole structure passes over rollers on the near bank. The bridge is then pushed across on these rollers until it is centred over the gap, and the "launching nose" is then dismantled. In the "Bailey" the nose requires no special parts and merely consists of a single panel, single storey construction, with no decking. Thus no anchorages are required; all bridge assembly can take place on land before any part is pushed over the gap; no derricks, ropes nor tackles are needed, and if power is required in pushing a span on rollers a bulldozer can do the job.

So much for bridging a "dry gap." Censorship does not permit me to give the length of the longest single span now used, but it is evident that no single span could cross the Rhine at Nijmegen or Cologne. It was, therefore, necessary to adapt the new conception to floating bridges. Production of pontoons has always been difficult, and it was obvious that some means had to be found whereby pontoons of the existing bridge equipment could be used with the new superstructure. This was achieved by the introduction of the new "centre section" pontoon which carried the necessary fittings for the new superstructure, and to which an existing bow section pontoon could be coupled at each end.

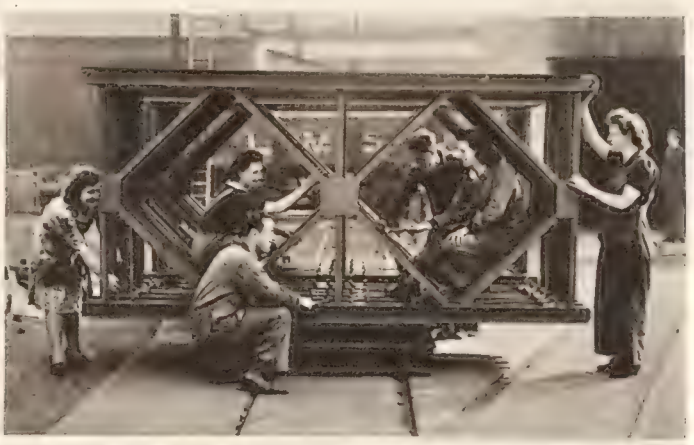
Floating trials went without a hitch and the final result was that an equipment had been produced which would make a heavy bridge, a light bridge or a floating bridge, all out of almost entirely the same parts. Moreover, the Bailey Bridge overcame one of the greatest worries which had existed ever since pontoon bridges were first used, because it eliminated the trestle. The Bailey Bridge, with its landing bays of 100-ft. or more, completely solved the problem by enabling loads to be carried from the bank direct to the first floating bay in deep water.

Needless to say, it is the inimitable Sappers who are responsible for the operational erection of the "Baileys." The field companies of the Divisional Engineers build the bridge while the Field Park Company of the Division are the store-holders who collect and arrange delivery of the equipment to a rendezvous, whence it comes under the O/c. Bridge, he being the Field Company Commander and being responsible for the marshalling harbour half-a-mile from the bridge site.

The equipment is brought up in a special order, the first lorries bringing the rollers and setting-out equipment, the next lorries bringing the panels, and the third lot bringing the decking equipment. If pontoons have to be used in a fast-running river, it is even necessary to have motor-boats, which will place anchors for the various sections of the floating bridge. Considerable seamanship is required for this. In the case of the Rhine, where it is tidal, the rise and fall of the water, quite apart from spring floods and enemy aircraft and artillery, have to be contended with. Besides this, it may be necessary to remove the centre section to enable vessels to pass.

And even now I have said nothing about the biggest problem of all, which is the preparation of the ground on the river bank nearest both ends of the bridge, which has to be prepared to take the weight of the heaviest tanks.

A BAILEY BRIDGE IS BUILT IN ITALY: South of Teano, German demolitions are spanned quickly and efficiently. The Bailey bridge is the best answer yet to the enemy's demolitions, and has greatly facilitated the Allied advance in both Italy and Normandy. It is a British invention, and is named after its inventor, Mr. D. C. Bailey, of the Ministry of Supply. Components, which are made in both the U.S.A. and Britain, are interchangeable and can be speedily put together. This, together with its great strength and stability, make it ideal for every purpose for which heavy bridging is required.



THE BAILEY BRIDGE IS BUILT IN SECTIONS—BY WOMEN: One of the great virtues of the bridge is that it can be built up in sections at home, and shipped overseas ready for service behind the lines. Many of the women engaged on the manufacture of these sections were employed, before the war in the making of beauty cosmetics

ON THE BATTLEFRONT: A section of a bridge is pushed out across the river by Combat Engineers while infantry wait for the completion of the work

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this publication should not be taken as an indication that they are necessarily available for export

A SCENE IN THE MINISTRY OF AIRCRAFT PRODUCTION FACTORY WHERE THE COLOSSAL NEW BOMBS ARE MADE: The initial stage in manufacture—the bomb is cast round the framework, on which rope made from wood shavings has been wound

AFTER THE FRAMEWORK FOR THE CORE HAS BEEN MADE, it is covered with a mixture of refractory facing paste and is then lowered into the mould from which the final casing is made. The core is made to very fine measurements and must take up accurately the internal form of the bomb. Here, on the left, are the cores for 12,000-pounders, and, on the right, for the 22,000-pounders, drying before they go to the casting-pit

THE CORE FOR THE 22,000-POUNDER IS LOWERED INTO THE MOULD: The moulds on left and right are ready for the molten metal to be poured. Hanging behind are cores for 12,000- and 22,000-pounders. The new bomb is over 25 ft. in length and nearly 4 ft. in diameter

AFTER FILLING, A TEN-TON BOMB IS MANŒUVRED BY PULLEYS: This picture gives a good idea of the huge size of the missile. The pictures given here are the first to be released of the R.A.F.'s latest "heavies"—the ten-ton bombs now being used with such devastating effects on targets in Germany. The pictures were taken in a Ministry of Supply filling factory, where holes have had to be dug in the floor to enable the workers to fill the huge 22,000-pounders

A COMPARISON IN SIZE: Above is a 12,000-pounder of the type which sank the "Tirpitz"; below is the new 22,000-pounder, which is now proving so devastating over Germany

The Great TEN-TON BOMBS of the R.A.F.

And How They are Made in Britain

The ten-ton bomb is heavier by 10,000 lb. than the type which sank the *Tirpitz*, and which made craters more than 100 ft. across the entrance to railway tunnels in France. It is 25 ft. 5 in. in length and has a diameter of 3 ft. 10 in.: based on the 12,000-pounder, the new missile has gone up by 10,000-lb. weight in one leap. It is carried by Lancasters specially built to bear the colossal load. The 22,000-pounder marks a greater step forward than in any of the earlier stages by which R.A.F. bombs were increased in weight and power. Four years ago—in March 1941—Bomber Command dropped its first 4,000-pounder; in 1943 came the 8,000-pounder; and, early in 1944, the 12,000-pounder. All of these were "blast" bombs. Six months later, in June 1944, the first "earthquake" bomb was dropped. Now we have the greatest of them all

IN BRITAIN TO-DAY

Scenes of Wartime Activities in Field and Shipyard

—And Details of the New Artificial Sapphires Now Being Made at Salford

During the war a complete oil-pipe-line system has been built in Britain, to ensure a rapid supply of the invaluable fluid and also safety from enemy bombers—apart from its other uses. The scheme enabled the pumping of 5,000,000 gallons a day during the invasion of the Continent. At great airfields in this country high-octane spirit for use in fighter and bomber aircraft can be obtained by just turning a tap on a branch line, to obtain fuel direct from seaports hundreds of miles away. Vital war industries have benefited, too, by an unlimited and instant supply by the same means. Mrs. Cripps (in picture on left) is one of the women patrols of the pipe-line. Every day, in all kinds of weather, she walks miles over her section of the line looking for slight leakages or defects, which can only be detected by saturation of the ground, or by smell. She also inspects safety valves at various sections on her route. The lines run all over the country

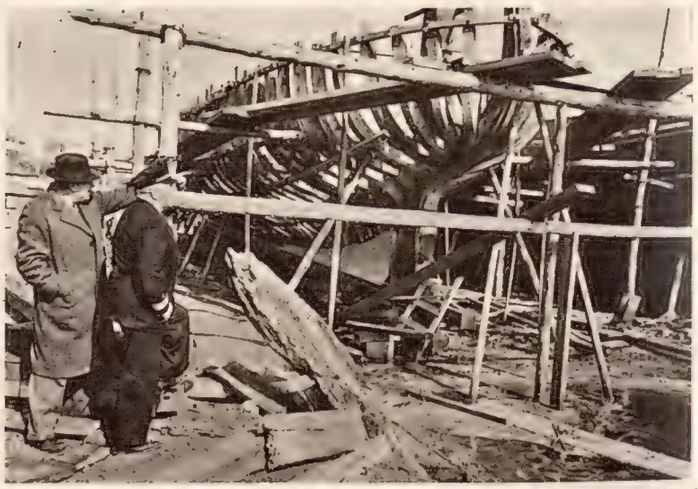
A "SECRET" PIPE-LINE IN BRITAIN 1,000 MILES IN LENGTH: There are many vital war industries to which the oil is run through it. Here, railway oil containers have been placed alongside a supply station specially constructed for filling tankers of this type

MRS. CRIPPS is one of the women patrols of the giant pipe-line. She is here making notes after an inspection at one of the pits along her route

FROM RYE TO THE FAR EAST: More than 1,000 years ago, at Rye in Sussex, shipwrights were building "Hearts of Oak" for King Alfred the Great. To-day, in this cradle of the Royal Navy, men whose art has been passed down from the craftsmen of old are building, by hand, special ships for naval duty in the Pacific—and the hulls are of Sussex oak, 100 trees to each vessel. Fitted with Diesel engines, the 120-ton "wooden walls" will soon be on their way from the ancient Rockchannel shipyard, to join the Allied Navies in the war against Japan. The three pictures reproduced here were taken during a recent visit to this historic yard set amidst the peace of Southern England

"HEARTS OF OAK" FOR THE PACIFIC: One of the wooden ships built at the Rockchannel shipyard at Rye is launched. It will soon be taking part in the war against the Japs in Far Eastern waters

HER DECK CROWDED WITH THE MEN WHO BUILT HER: A wooden ship takes the water at the little seaport of Rye, in Sussex. Another vessel, still in skeleton form, is seen on the stocks on the left



COMMANDER J. K. ALLEN, OF THE U.S. NAVY, visits the Rockchannel Yard to see how the Sussex shipbuilders carry out their work. He was formerly a fisherman, and hails from New Jersey

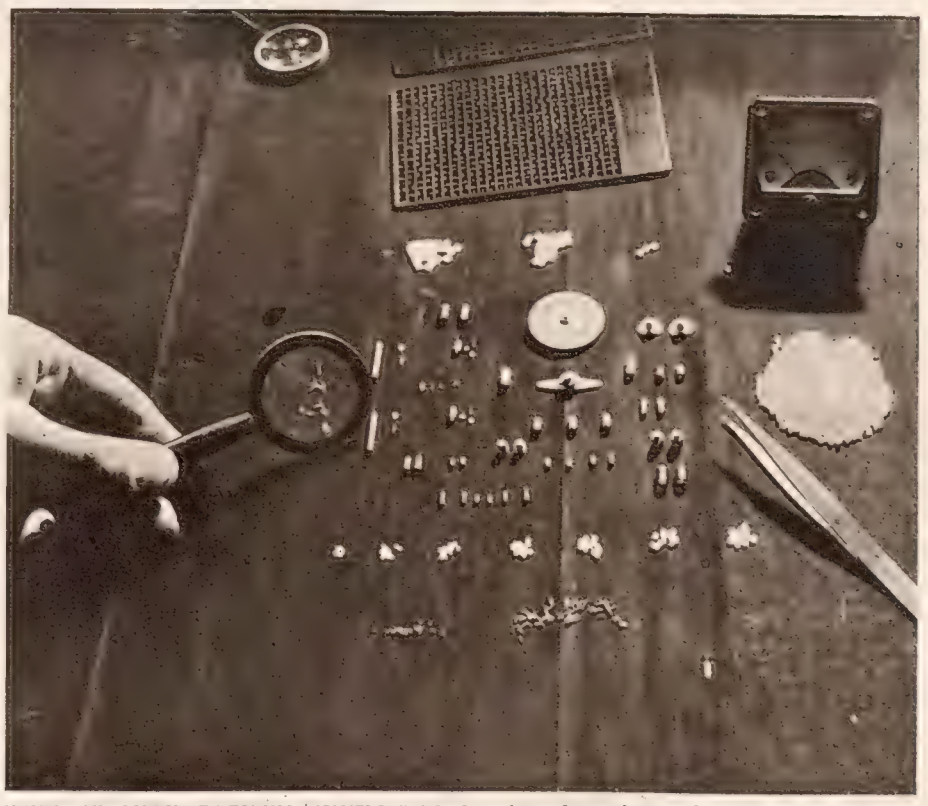
ARTIFICIAL SAPPHIRES TO AID IN THE WAR EFFORT : A batch of newly-made synthetic stones, split, numbered and weighed, are examined by the chief chemist for flaws before being sent to the cutters

In 1939 there was no experience in Britain of the making of suitable synthetic stones on a large scale. All the chief centres of production were located in and near Switzerland and its watchmaking factories—at Monthey and Locarno, in Switzerland; at Bitterfeld and Zwickau, in Germany; and Annecy and Garrie, in France. And the production techniques and all the accumulated experience were guarded jealously. Here was an obscure and tiny item among all the myriad items in the armoury of war. And yet, if built-up stocks ran out and we were deprived of access to more supplies from the countries that had a virtual monopoly of manufacture of these jewelled bearings, then our situation was grave indeed. That was the position. The obvious solution was to have the stones made in Britain. A branch of the General Electric Company at Salford—Electrical Instruments Limited (where these pictures were taken)—was approached and asked to tackle the job, which was in two parts: (1) the actual making of the synthetic sapphire, a complicated chemical and high-temperature process; and (2) cutting and machining the crystals into jewelled bearings of the right size and shape for the particular work

THE SPLIT SAPPHIRE "BOULE" IS CUT INTO SLICES and then into strips which, in turn, are cut into small cubes about quarter of an inch across. These cubes are then ground into circular shape, drilled and polished, and become frictionless bearings for watches, compasses and other instruments. Sapphires are the next hardest substance to diamonds. The cutting saws and drills, therefore, are smeared in diamond dust held in grease

***On right*—Artificial sapphire and ruby.** Though war needs demand white sapphires for instrument jewels, experiments are going on to make stones with their proper colouring for gems. A ruby-like sapphire is composed of fused alumina but with the addition of a trace of chromium oxide. On the right are some which have been cut as gems to assess their appearance

THE CANAL BARGE IS DEMOBILISED—a recent scene on the Thames. Two coal barges, which were fitted up as fire barges by the River Thames Formation of the N.F.S. and went through the blitz at the docks, have now had their fittings removed and are being handed over to the Grand Union Canal authorities. They are known as the *Poplar* and the *Cardiff*: the former worked in the Surrey Canal, and the latter was employed in the docks and canal. Here they are seen in tow, passing the Tower Bridge up-river. Fireman Tom Winter, formerly a bus conductor, is seen on the left; and Fireman Bert Jardine, a former paint-maker, whose family were all lightermen, is on the right



HEAPS OF SAPPHIRE-BEARING JEWELS finished and ready to be set in screws. In the centre, various-shaped housing screws for different instruments are seen; on the left are the tiny springs on which jewels rest within screws to resist vibration. The slotted tray at the top holds springs of different tensions. The jewels go into electrical instruments like the one on the right

The World of Books—By Vernon Fane

ESCAPE TO A WELLSIAN DREAM WORLD

Mr. Wells Retreats from Reality; Crime in Ancient Egypt; A Year in the Highlands; A Study of Brotherly Jealousy; "Where There's a Will There's a Way!"

LIFE is complicated, mysterious, maddening, and to-day the world is an uncomfortable place for most of us, so it is not surprising that Mr. Wells should beat a retreat from reality, from the war and from his mounting years to escape—like Alice through the little door—down **THE HAPPY TURNING** (Heinemann. 6s.), a thoroughfare which on his daily walks he has always overlooked until now. There he says, "I leap gulfs unerringly, scale precipices, shin up trees, and am indefatigable. There are no infections there; no coughs, no colds; to cough or sneeze would be to wake up and tumble back headlong into those unhygienic present-day realities where dirt-begotten epidemics have their way with us. Maybe a day will come when a cleansed and liberated world will take the Happy Turning in good earnest and pass out of the base and angry conflicts which distract us from wholesome living."

MILLIONS OF BOOKS FOR THE FORCES: The men and women of the Services are to get an 8,000,000-volume library of newly printed travel books, biographies and books of purely entertainment and educational value. This is the target aimed at by the Central Book Depot which supplies reading matter to camps wherever the British Forces are. During 1944, 7,178,000 books; 10,000,000 magazines and 8,000,000 Sunday newspapers were despatched to the Forces. Above are seen some of the special Forces Editions of paper-covered books—all for the Twenty-first Army Group in France

In this dream world, he finds Jesus reading press cuttings, and on another visit there are a number of poets, painters and artists, including an anthologist, who disagrees with some of Mr. Wells' opinions on art, but is too dream-like and shadowy to assert himself. This is fortunate for Mr. Wells, since, like his colds and coughs, his discerning literary judgment is not prevalent in this escape world. ". . . . the vanity, crudity and unimaginative topicality of that overrated etcher, Blake, the jingling vulgarities of Byron, Martin Tupper, Alfred Noyes, T. S. Eliot, Bridges and the rest of them—as void of the mysterious exaltation of Beauty as a crew of disinherited mourners at a bankrupt's funeral on a wet day," he writes, and "Who in the great world we dream about will delight in any of this later stuff? Have we any use for it at all?"

For all its attractions and novel features, it is not with too much regret that one returns to reality, where Blake, Byron, Eliot and Bridges can still delight, where joy is the greater because there is sadness too, where youth is eager, if only with illusions, and the heart, though tired, still pulses with feeling.

I must confess to a disability, as definite and as difficult to conquer as a distaste for cloves, to read a novel or literature of any kind about Egypt, at least the Egypt of thousands of years ago when Ra and Osiris and Anubis were still at the height of their legendary and godly powers. That part of my mind through which I record interest or amusement closes down sharply, and I find myself either continuing with dutiful doggedness (scarcely the frame of mind novelists appreciate in their readers), or a long way off at the other end of the bookshelf re-reading an old favourite, in a passable imitation of Dr. Johnson.

All this to explain why, although I am a fan of Mrs. Agatha Christie's, I didn't get on better with her new book **DEATH COMES AS THE END . . .** (Crime Club. 7s. 6d.). This opens in Egypt, 4,000 years ago at Thebes on the banks of the Nile. It concerns a well-to-do family and their father who is a mortuary priest, and who, not content with his own rather grim profession, starts a very great deal of trouble by importing a beautiful but sulky new concubine into his home.

From then on a peculiarly Egyptian sort of chaos sets in, through which I diligently pursued my way, encouraged by the fact that even with this fearful handicap, as it seems to me, it is impossible for Mrs. Christie to write a dull chapter. The fact that her researches into Egyptology are demonstrably well done is small comfort to any but an Egyptologist, and I must close the discussion with the wistful thought that if it had all been set in Putney within the last fifty years, I should probably have enjoyed it exceedingly.

If I cannot be convinced about the glories of Ancient Egypt, I am a ready listener or a reader of anything that will widen my very exiguous knowledge of the Highlands. I know them only a little, but yet I can understand some of the enchantment that they have for those who know and understand their bleakness and grandeur. **A HIGHLAND YEAR** (Eyre and Spottiswoode. 12s. 6d.) is a record by Mr. Seton Gordon of the past year spent partly in the Island of Skye and partly in the neighbouring highlands.

Like the best writers of this kind, he digresses gracefully and informatively, and on the same page will touch on navigation in summer fogs, the migration of swallows only "a foot or more off the ground" and judging the piping at the Braemar Gathering. The last is just one of the many things, incidentally, in which the writer is interested. He is a naturalist, an ornithologist, and, before and beyond all, a lover of that part of Scotland and the Western Isles of which he writes.

His descriptions vary from the sight of a mother and father rabbit bringing up their young with the most careful ingenuity to an anecdote in broadest Scots of a mishap at a local concert. In its own way this is a *rich* book, full and packed down with good things and happy memories. It should be read and appreciated as slowly and meticulously as one would smoke a good cigar.

Mr. Paul Capon's novel is about a completely repellent character and yet remains a compellingly readable book. It is something else beside that; a thoughtful yet witty indictment of brotherly jealousy. The writing is quiet in tone but extremely persuasive. It has none of the blustering quality of the picaresque or the deliberate "there-are-going-to-be-900-more-pages-of-this" attitude, which is sometimes an attempt to claim importance for a novel that is not epoch-making but merely very long. On the contrary, this is a self-controlled and well-executed piece of work, all the more effective for its restraint.

It occurred to me, as I was reading **BROTHER CAIN** (Heinemann. 8s. 6d.), that perhaps the most admirable single thing in its construction—for it is a novel worth analysis—is the decision the author made in the beginning to treat his theme from, as it were, Cain's point of view. The story would still have been interesting if it had been told from the angle of a younger man, affectionate, gifted, sincere and single-hearted, yet with his well-being and his future perpetually threatened by his brother. It might have been a good story that way, but it is an infinitely better one as it is, with the interest centred on the older man, and the natural development of the plot proving that man for what he was.

At the opening of the novel, Basil Brereton-Scott is leading a dull life and drawing a small salary in an anomalous position best described as assistant to a sub-editor on a little magazine with a big circulation. His young brother Mark Scott, who prefers a single-barrelled version of the family name, has recently come to London and is working for an even smaller salary for an old-fashioned firm of publishers. He has written some original short sketches for a new, intellectual weekly and they have had a critical success. He is planning to write a novel which eventually takes him three years, and which, with small sales, is still a world-wide *succès d'estime*. It is precisely this literary reward which acts as flint to his older brother's tinder. For Basil, whom we know at first as a smug mediocrity, is a man in whom all passion of mind and body is concentrated in his jealousy of his younger brother, whose talent he will not and cannot admit. Basil, too, plans to write a novel, and having the originality of a stereotype, works out his plan and selects his genre from a textbook. For the rest of the time they are both alive, the essential position remains static, though Basil grows rich and excessively well known, while the knowledge of Mark's far smaller but faithful literary public is still the bitterest pill that Basil has to swallow.

The ending is classic, though somehow lacking in the drama that the violence of the action might convey. Whatever its faults, however, this is a novel and a novelist which most readers will take quite seriously.

There is a fine scene in a book of Saki's when some prodigious bore describes the indescribable. I was reminded of it when I was reflecting the other day how few novelists attempted to resist the irresistible, by which I mainly mean the irresistible in situation. To a writer of crime fiction, for instance, how tempting it must be to kick off with a large family grouped round an elderly relative waiting to see how the will reads, and, more essential, when the will is likely to be read. The old party doesn't have to be particularly unpopular to help on the ghoulish atmosphere. It is just a kindly convention that the person who has been destined as murder bait since page one, line seventeen, should be fairly unlikeable, so that the reader may save all his energies and all his emotions to the solution of the paradoxically expected mystery.

Miss Anne Hocking succumbs with a good grace to the temptation, and her new book, **THE VULTURES GATHER** (Geoffrey Bles. 8s. 6d.), has as fine an assortment of extravagant wives, husbands in debt, jealous cousins and tigress mothers as any country solicitor ever had to face at a will reading. Miss Hocking adds to the fun by having the will read before the old lady, a rather nasty one in this case, signs it, since it is one of her pleasures to surprise looks of envy or anger or mere unhappiness on the faces of her beneficiaries. But she dies before her pen can quite finish the signature, and the question then remains as to who knew that they would have benefited more by a previous will, and who had the opportunity to strike with such lightning swiftness.

Nice work, Miss Hocking.

A GRAPHIC APPEAL NEAR BIRMINGHAM: "A Solihull scene in Elizabethan Days" is the subject of this giant sign, 38 ft. high and 28 ft. wide, which has been erected in the village of Solihull, near Birmingham, opposite the Old Manor House, built circa 1472, which a committee of local residents under the chairmanship of Mr. John Burman, J.P., F.R.Hist.S., is trying to save by public subscription for the nation, for the use of youth organisations and for ex-Service men and women. The Manor House is the building shown on the right-hand side of the sign. Of the £12,000 needed, £6,000 is still required—hence the present appeal to the charitable

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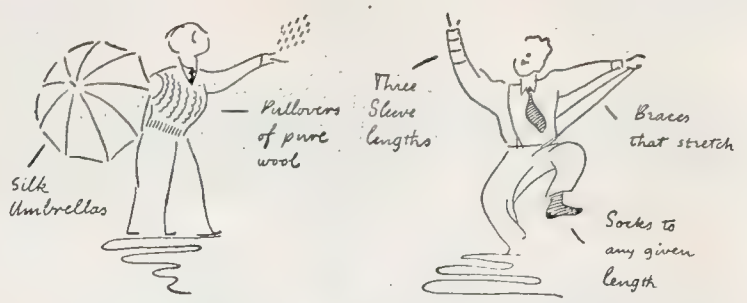

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ALTHOUGH, alas, we cannot for the present make any more of the wonderful VITABUOY Life-Saving Overcoats, we have a small number still in stock in large, medium and small size. Their price (including Purchase Tax) is 114/- and they require 16 clothing coupons. If you need one you should order at once before it is too late. In doing so, please quote Chest measurement and Height.

Vitabeau

R. N. and R. A. F. RAINCOATS.

SO far as we know, there are no VITABEAU Tropal-interlined Coats available anywhere, but we still hold small stocks of R.N. and R.A.F. Officers' Raincoats and these can be obtained through the leading Service outfitters.

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Telephone: BIShopsgate 6565

COMMON COLD

Common sense . .

THE common sense approach to the problem of the common cold is "Serocalcin" and people who maintain that colds are "inevitable" ignore available *facts.* For more than eight years "Serocalcin" has been prescribed by the Medical Profession and the efficacy of "Serocalcin" for treatment or prophylaxis *in some 8 out of 10 cases* is now a matter of established *fact.*

•

"Serocalcin" (reg. trade mark) is a sulpho-guaiacolic plasma precipitate which enhances the resistive capacity of the body against invading organisms that cause colds. It is contained in small tablets, easy and pleasant to take.

•

Three tablets, three times daily, will usually clear up a cold in 48 to 72 hours.

•

Two tablets daily, for 30 consecutive days, provide immunity in some 8 out of 10 cases for a period of 3 to 4 months.

•

There are no "drugs" in "Serocalcin" and consequently no unpleasant reactions. Treatment or prevention can be given to children with perfect safety.

•

A treatment pack of 20 "Serocalcin" tablets costs 3/4½ (inc. tax). The full immunizing course of 60 tablets costs 8/5½ (inc. tax). All who suffer from the common cold are invited to send 1d. stamp (to comply with regulations) for booklet "Immunity from Colds."

SEROCALCIN PREVENTS COLDS

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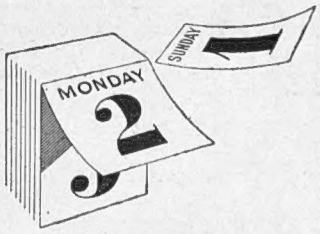

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(Extract from Statement to Shareholders issued by Mr. Colin F. Campbell, Chairman **National Provincial Bank Limited,** *January, 1945.)*

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In short, it has emphasised the wisdom of buying clothes from Bernard Weatherill. For that is the surest way of securing not only the *best value for money*, but also the *best value for your coupons.*

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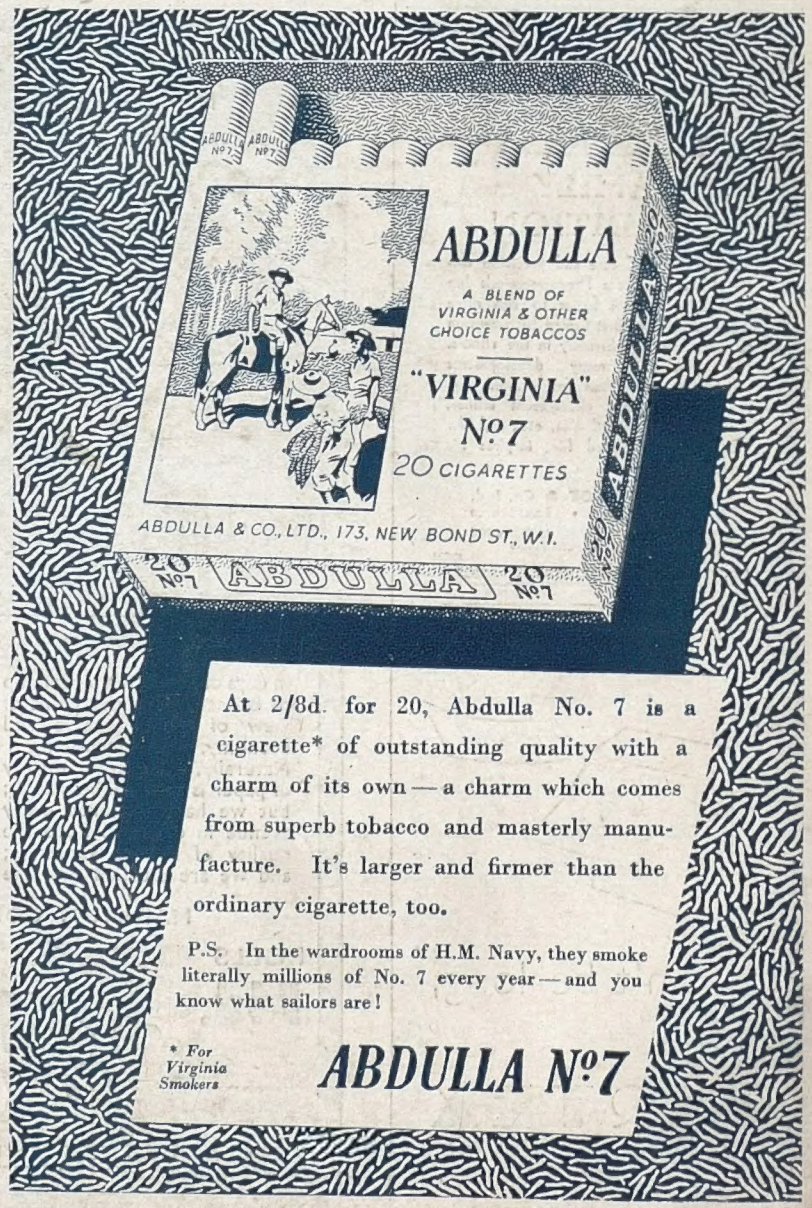

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** For Virginia Smokers*

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